THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway, New York.)

Entered at the Post-Office of New York, N. Y., as Second Class Mail Matter.

VOL. LXIX. MAY 19, 1900. No. 20.

RICHARD P. ROTHWELL, C. E. M. E., Editor.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
THE SCIENTIFIC PUBLISHING CO., Publishers.

SUBSCRIPTIONS ARE PAYABLE IN ADVANCE. For the United States, Mexico and Canada, $5 per annum; all other countries in the Postal Union, $7.

REMITTANCES should be made by bank drafts, post-office orders or express money orders on New York, payable to the Scientific Publishing Co.

When change of address is desired, both old and new address should be sent.

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Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.

New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.
London Cable Address—"PULCINETTO." " " " "

Branch Offices: Chicago, Ill., 737 Monadnock Building, Phone 73 Harrison.
Denver, Colo., Boston Building, Room 206.
Salt Lake City, Utah, Atlas Building.
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English subscriptions to the JOURNAL may be paid at the London Office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar, net.

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There is a peculiar fill at one of the Eureka Fuel Company's plants in the southern part of Fayette County, Pennsylvania. At this place it was necessary to provide a working space for the production of coal by the time the coke ovens are built, and also a fill at a point where dirt was not on hand. So the company just dug out the coal and used it for the bed of a railroad track. It is not everyone who can afford to use good coal for filling.

As was anticipated when arrangements were made to extend the Siberian Railroad through Chinese Manchuria, the Russians have begun to exploit the mineral resources of the country. A Russian syndicate has occupied and begun to work a gold placer in the Sungari region, and others are preparing to follow. The tributaries of the Amoor from the southern or Chinese side are known to be rich in gold, and it is probable that all the valuable territory will be in Russian hands before long.

It is apparent that the construction of a railroad from the mines to the Hudson River, on the line of the abandoned Delaware & Hudson Canal, which the Pennsylvania Coal Company proposes, is to be prevented if possible. An appeal to the courts has been taken from the order of the New York Railroad Commission which authorized the construction of the road. The plaintiff in the case is the New York, Ontario & Western Company, but it is supported by the other anthracite companies in its action, without doubt.

Mr. John W. Gates retires nominally from his position at the head of the American Steel and Wire Company, and has gone to Europe for a time. His successor was appointed on his nomination, however, and the Gates influence will control the company still. The conservative element in the management has been dropped altogether, and the Chicago party will have full swing. Incidentally Mr. Gates has done a good deal toward discrediting "trusts" and trust management in the public estimation, as may be shown hereafter.

The large blowing engine operated by waste gases from the blast furnace, which was recently installed at the Cockerill Works at Seraing, in Belgium, is now in daily use and has, so far, worked to the entire satisfaction of the builders and the Cockerill Company. Its usual speed is 80 revolutions per minute, and it delivers blast at a pressure of 40 centimeters quicksilver; but it has been run up to 90 revolutions, delivering blast at 45 centimeters pressure. At the maximum the indicated work was 680 horse-power. No trouble has been found from dust in the gas, and the engine runs very smoothly. This engine was described and illustrated in the "Engineering and Mining Journal," February 10th, 1900, page 171.

Exports of coal from the United States in March included 11,046 tons of anthracite and 622,463 tons of bituminous, a total of 743,509 tons, as compared with 402,076 tons last year; the increase being 341,433 tons. For the nine months of the fiscal year, from July 1st to March 31st, the exports were 3,682,675 tons for 1899 and 5,267,678 tons this year; showing a gain of 1,585,003 tons, or 43 per cent. The increase in shipments to Canada was 1,453,001 tons and to Mexico 127,803 tons. The exports to Europe were 109,414 tons this year, and 28,168 tons last year; a large proportionate increase, though the total is still small. The trade to South America and the West Indies showed a small decrease. Our total exports were less than 3 per cent. of our production.

It is understood that arrangements have been made to float in New York a company to operate gold mines in Eastern Siberia, and that this company will be followed by others if the first flotation proves to be a successful one. There is no doubt that opportunities for the investment of capital exist in Siberia and that the gold output might be largely increased by the use of capital in introducing machinery and modern methods of working. Russian mining laws, however, are peculiar, and their enforcement is very strict and sometimes arbitrary. The first points about which an intending investor should assure himself are the entire regularity of the concession on which the company is based, and the full compliance with all the formalities of the law.

The English market for pig iron has shown considerable fluctuations recently, and at one time a serious break in prices seemed probable. There was a quick recovery from the fall, however, and quotations are still high. Thus the latest reports show Scotch pig selling at $17.25 per ton in yard, Cleveland iron at $18 and Bessemer pig at $20.25. The unusual feature of a higher price for Cleveland than for Scotch pig still continues to be seen. It is evident that British buyers of iron are still basing their calculations on continued heavy consumption and a possible short supply at home. In fact, many of them are counting

on a considerable import of iron from the United States in the second half of the year. In watching the changes in the British market it must be remembered that pig iron is much more a speculative article there than here, and dealing in iron warrants stands very much on the same footing that operations in wheat do in New York and Chicago.

California made an excellent showing last year, notwithstanding certain drawbacks, such as lack of rain and consequent short water supply for some of the mines. The total value of the mineral products of the State in 1899, as reported to us by State Mineralogist A. S. Cooper, was $29,313,460, a substantial increase over 1898. Gold was by far the most important item, reaching a total of $15,336,051, or 52.3 per cent. of the whole. Copper came next in order, its value being $3,990,534, or 13.6 per cent. of the total. The only other metallic product of importance was quicksilver, the value of which was $1,405,045, or 4.8 per cent. of the total. These three metals furnished 70.7 per cent. in value of the entire production. Of the non-metallic products petroleum was the most important, with an output valued at $2,660,793; while borax came second, with a value of $1,139,882. Coal is not an important item, but the production of petroleum is growing rapidly, and it is quite possible that crude oil or the residues from refining may become an important factor in solving the problem of fuel supply on the Pacific Coast. California petroleum is, moreover, better adapted for lubricating and fuel purposes than for illuminating oil. The minor articles of production made a very good showing last year, especially the materials of construction, such as lime, building stone, slate and the clay products. The report shows that the mineral industry of California is still a growing one, not only in amount, but in the diversity of its products.

We have frequently referred to the cheapness of transportation on the Great Lakes, and its effect upon the distribution of iron ores from the Lake Superior region. We now find in connection with the distribution of those ores what is probably the lowest cost yet reached in transportation by railroad. This example is found in the case of the line built by the Carnegie Steel Company to carry iron ore from the port of Conneaut on Lake Erie to the company's works near Pittsburg. In this line almost the perfection of railroad transportation, according to our present standards, has been reached. The road—known as the Pittsburg, Bessemer & Lake Erie—is 153 miles long, and has been built to carry the heaviest locomotives that can be furnished. The grades are moderate, there is no passenger traffic to interfere with the movement of freight, and all the equipment is of the latest design. With steel cars carrying 50 tons of ore each, it has been possible to bring the train-load up to a maximum of 1,580 tons; and with nearly all the traffic in one direction, the recent average train-load is stated at 777 tons. Arrangements have been made for a large return freight of coal, which will very probably bring the average train-load up to 1,000 tons, or more than double the best result heretofore attained. The loading and unloading arrangements at the terminals include the latest machinery, and there is no delay in handling ore, so that the traffic can be worked to the best advantage. It is true that this road has peculiar advantages in the nature of its business; but it is still an admirable example of what can be done on an American railroad under favorable conditions.

ADIRONDACK GOLD MINES.

We have noticed recently, chiefly in the Boston papers, advertisements of different companies which propose working the so-called gold bearing sands in the Adirondack region of Northern New York. The most prominent of these cards is that of a concern calling itself the Boston-Newton Investment Company, which announces "Gigantic Fortunes in the Golden Placers of the Adirondacks, now being taken out by a process recently perfected." It further goes on to claim the ownership of 10 claims of 400 acres each in Lewis County, New York, and says "In each claim there is more than 10,000,000 tons of gold-bearing sands, carrying from $5 to $20 per ton. A process that is simple and readily understood, now in practical operation, turning out $8 per ton in gold at a cost of $2." There is much more of the same sort of stuff, and of course the company promises "enormous dividends."

No names of directors are given in the advertisements or circulars, but we gather from them that F. E. Tuttle and E. P. Bellows are respectively treasurer and general manager of the company in Boston, and E. S. Harris is superintendent at "Golden Wonder Camp," at Belfort, N. Y. We rather expected to find the name of the Rev. Mr. Jernegan, since the style much reminds us of the prospectuses of the Electrolytic Marine Salts Company; but it does not appear, and perhaps the reverend manipulator of sea-water amalgam is not in the company after all—or at least keeps modestly in the background.

Of the character of the concern, however, there can be no doubt. The "gold-bearing sands" of the Adirondacks are old acquaintances, and have been exploited more than once for the benefit of promoters and the plunder of stockholders. The existence of gold in those sands in any paying quantity has been disproved frequently. No one has succeeded in saving gold from them, though several inventors have claimed to do so by "secret" processes—which were probably of the same character as Rev. Jernegan's secret treatment of sea-water. Two years ago a mill was built at Hadley and was worked with much parade; but no gold has come from its ore.

During the height of the Boston boom in mining stocks a year ago several concerns attempted to take advantage of it by floating Adirondack schemes, but apparently with little success. This new outbreak of advertising is apparently the work of men who believe in the short memory of the public and in the general credulity of small investors.

The "Engineering and Mining Journal" has had occasion several times to refer to these schemes, the more recent statements being found in our issues for September 3d, 1898, page 275; September 24th, 1898, page 363; and August 26th, 1899, page 241.

We have again to warn the public that these Adirondack schemes have no basis whatever to stand on. Stories of gold actually recovered are pure inventions, and the promoters look for their profits in Boston pockets and not in Lewis County sand-banks.

IRON AND STEEL PRODUCTION OF THE WORLD.

The universal activity in iron and steel manufacture which marked the year 1898, not only continued but increased in 1899. The demand for material was unprecedented, and while production increased everywhere, it hardly kept pace with the consumption. Great as were the supplies, prices remained high, and manufacturers were unable to furnish materials as fast as they were called for. A year of the greatest activity closed with stocks at all the great distributing centers drawn down almost to the vanishing point. It seemed as if the whole civilized world was eager to buy iron and steel—and would have bought more if it had been available.

There is not space here to go into the causes of the universal activity in trade, or of the wave of prosperity following the long period of depression which began with the Baring failure in 1890 and reached its lowest point in 1894. The upward movement has probably nearly culminated, and we can only show here its effect on the iron trade of the world last year.

We have now received the official figures of the production of iron and steel in 1899 for all the leading countries, and are able to estimate very closely the output of those which have not yet fully reported. The figures are given in the following table, comparison being made with those given in "The Mineral Industry," volume VII, for 1898. Th figures are all in metric tons:

	Pig Iron.		Steel.	
	1898.	1899.	1898.	1899.
United States	11,963,317	13,838,634	9,075,183	10,832,705
Great Britain	8,769,249	9,454,204	4,639,042	4,933,010
Germany	7,402,717	8,029,305	5,734,307	6,290,434
Total, three nations	28,134,283	31,322,143	19,449,132	22,056,209
Belgium	982,748	1,036,185	653,130	729,920
Canada	42,250	45,000	.....	.....
France	2,534,427	2,567,380	1,441,633	1,529,181
Austria Hungary	1,250,000	1,465,000	605,500	1,100,000
Italy	12,850	13,960	58,750	61,500
Russia	2,228,850	2,650,000	1,095,000	1,494,000
Spain	261,799	295,840	112,605	122,954
Sweden	510,550	524,000	289,750	258,500
All other countries	545,000	655,000	355,000	401,500
Totals	36,492,757	40,574,508	24,060,500	27,753,764
Increase, tons	.....	4,081,751	.....	3,693,264
Increase, per cent	.....	11.2	.....	15.3

An increase of 11.2 per cent. in the production of pig iron over a year of very large output is a remarkable gain; and the advance of 15.2 per cent. in steel is also a notable result. The totals of both are greater than would have been thought possible a few years ago; and all the iron making countries shared in the increase.

The year served to emphasize the predominance of the three chief producing countries—the United States, Great Britain and Germany. In 1899 the United States made 34.1 per cent. of the world's supply of pig iron and the three countries named 77.2 per cent.; while the proportions of the steel output furnished were 39.0 and 79.5 per cent., respectively. The United States showed the highest proportion of increase in both iron and steel, though Germany made also a large gain. In the minor producing countries the advance was more moderate, France and Belgium especially showing only small increases. In both those countries the gain in output was less than that in demand, the make of iron and steel being limited by the supplies of fuel. About iron ores there was no difficulty, but the production of coal and coke seems to have reached nearly the maximum possible, and even very high prices failed to induce an increase in the supplies.

The year also showed a further growth in the use of steel for constructive purposes in place of wrought and cast iron. In 1899 approximately 75 per cent. of the pig iron produced was converted into steel,

while the proportion in 1898 was 72 per cent. The proportion of steel to pig iron made is highest in Germany, though the United States is not far behind. Great Britain makes the most wrought iron, the puddling furnace having held its ground there better than in any other producing country. Germany produced 1,357,424 tons more steel than Great Britain last year, though its pig iron output was 1,424,899 tons less.

The pig iron production of 1899 required the mining and handling of approximately 90,000,000 tons of iron ore; a figure which gives some idea of the quantity of labor required to produce the metal which the world demands. The question of iron ore supplies is becoming an important one in several European countries, and the mines of Spain, Sweden, Greece and Algeria are being drawn upon heavily to supply the British and German blast furnaces. In Great Britain especially this matter of the iron ore supply is causing much discussion. Germany has still large supplies at home, and the imports are of less importance. In the United States we shall not need outside supplies for many years.

Whether the iron production of 1900 will exceed that for 1899 is still to be determined. The output for the first half of the year will certainly be very large, but there are signs that the upward movement in the iron trade has ceased, and the latter part of the current year may see a decline. It is certain, however, that the production of the year will nearly or quite equal that of the preceding one, if it does not show an increase.

NEW PUBLICATIONS.

"Thirteenth Annual Report of the Interstate Commerce Commission." Edward A. Moseley, Secretary. Washington; Government Printing Office. Pages, 300.

The position and importance of the Interstate Commerce Commission are now fully established and recognized, and most people are inclined to admit the benefits of the supervision which it exercises over the railroads. The report gives a general account of the work of the Commission during the last fiscal year, and shows the variety of questions which are brought before it for decision, and the many topics which must be considered. The statistics compiled from reports also show the extent of railroad operations in this country.

"A Manual of Practical Assaying." By H. Van F. Furman. Fifth Edition. New York; John Wiley & Sons, and London; Chapman & Hall, Limited. Pages, 464; illustrated. Price, $3.

During the seven years in which Mr. Furman's book has been before the public, its reputation has been firmly established as a standard work. It is so well known that a full notice is not needed here, especially as the book was carefully reviewed in our columns when it first appeared. The new edition has been carefully revised and two appendices have been added, one on the "Mechanical Assay of Gold and Silver Ores," and one on the "Calculation of Copper Matte Blast Furnace Charges." The former is of special importance now that the concentration of gold and silver ores is receiving so much attention. It contains the mechanical assay of gold and silver ores by a combination of the processes of amalgamation and concentration. These are described at some length and are illustrated by diagrams and tables; and the latest available data have been included. The additions and revisions serve to bring the work up to date and to keep it in place as a standard guide for young assayers and a book of reference for older ones.

"Geological and Natural History Survey of Minnesota: Twenty-fourth and Final Annual Report." N. H. Winchell, State Geologist. Minneapolis, Minn.; University Press. Pages, 292.

This volume, which is the twenty-fourth issued by the Minnesota Survey, is also intended to be the closing one of the series. The portion devoted to current work gives an account of the surveys, explorations and field work completed during the year 1895-98, chiefly in the northeastern part of the State. Another section is devoted to a tabulation and description of the rock samples collected by the Survey. A very useful addition is a very full general index to the 24 reports issued by the Survey, which will enable those who have occasion to refer to them to place at once the information they desire, thus avoiding the necessity of going through the different volumes. This report closes a very creditable record of a work which has been of much service to the State and of interest to geologists generally.

University Geological Survey of Kansas. "Special Report on Gypsum and Gypsum Cement Plasters." By G. P. Grimsley and E. H. S. Bailey. Topeka, Kan.: State Printer. Pages, 184; illustrated.

The publications of the Geological Survey of Kansas have heretofore included a special report on coal; and the present volume is another excellent and useful special report and is devoted to gypsum, which is a very important item in the mineral resources of the State. Kansas has apparently unlimited quantities of gypsum, in a great variety of forms and under differing geological conditions. If the report were confined strictly to the State it would be very much in the nature of a treatise on the various occurrences of gypsum. As it is, the authors have presented an introduction giving a condensed general account of the distribution of gypsum and its uses, which serves to complete the book and make it a general summary of the subject.

The chapter titles will give a fair idea of the contents of this book, and they are as follows: History and Distribution of Gypsum Deposits; Geography and Topography of the Kansas Gypsum Area; History and Geology of Kansas Gypsum; Kansas Gypsum Mines and Mills; Origin of Gypsum; Technology of Gypsum; Gypsum as a Fertilizer; Chemistry of Gypsum, Plaster of Paris and Cement Plaster; Statistics of Production; Bibliography. The subject, it will be seen, has been very well covered, and the report comes very near to being the most nearly complete work on the gypsum industry in existence.

The gypsum deposits of Kansas are remarkable for their extent, and there is no doubt that gypsum and its products will constitute a very important element in the wealth of the State. It is well known that gypsum cement plaster in its various forms is rapidly replacing all other kinds, and its use is constantly increasing all over the country. Kansas will undoubtedly meet a large part of this growing demand.

The report includes a thorough study of methods of calcining and preparing the gypsum for market, and the manufacture of plaster and other products. It is illustrated by views of mines and other localities, by drawings of machinery and by a number of geological sections.

"Between the Ocean and the Lakes: the Story of Erie." By Edward Harold Mott. New York: John S. Collins. Pages, 512, illustrated. Price, $7.

The Erie Railroad Company, which was second only to the Baltimore & Ohio as a great through line intended to connect he seaboard with the western waterways—for the Pennsylvania and the New York Central were simply aggregations of short local lines—has had a more varied and dramatic history than any other railroad company in the United States, or, indeed, in the world. On its physical or operating side the history of the Erie is almost a history of railroading in America; on its financial side it exemplifies about all the vices and some of the virtues of American railroad management. It is perhaps strange that no attempt has been made before to write a complete account of this history. Some 20 years ago Mr. Charles Francis Adams, Jr., wrote "Some Chapters of Erie," which is one of the notable books on American railroad management; but his work did not profess to be a complete history, and was devoted chiefly to the financial side of the administration. Mr. Mott has evidently brought to his work a good knowledge of general railroad conditions, and devoted to it much time and labor. He has collected from widely scattered sources the information needed to make his account complete, and he has used his great mass of materials with much judgment. His narrative is generally clear and is not overloaded with details and digressions; it is written with evident impartiality and is everywhere substantiated by references to the original sources of information.

The general public is naturally inclined to look chiefly at the financial side of the history, and here there is much of striking interest well told in these pages. The wrecking of the road under the Gould-Fisk administration, and the deeper and better concealed corruption of the Watson management, which plundered the company under the guise of reform; and in earlier and now almost forgotten days the Eldridge control and the Boston, Hartford & Erie intrigues, which went beyond railroad maangement, defeated one candidate for the Governorship in New York and unsettled Massachusetts politics for years. There were other episodes which had their dramatic side in the years when Erie was a heavy burden to carry—so heavy that the labor of purifying its management broke down and killed so strong and able a man as Hugh J. Jewett.

It must not be forgotten also that for years the Erie was a school of railroading from which graduated many strong men, such as Hugh Riddle and a score of others who later did notable work in building up the railroads of the West. The story of Erie is an excellent compendium of what to do and what to avoid in railroad management. Incidentally, it includes also some biographical notices of a number of the best-known railroad men and financiers in America.

The scope of the work may be partially indicated by a rehearsal of some of the headings in the list of contents. The first three are "In Embryo," 1779 to 1831; "Taking Form," 1831 to 1832; "Organizing Erie," 1832 to 1833. Eighteen chapters are given to the administrations of the different presidents, chronologically arranged. These finish the main part of the work, but take up only about three-fifths of its pages. The remaining portion gives details of the early struggles in the construction of the railroad, local history to 1851, when the principal lines were finished, and finally the operating history, the latter taking about 75 pages. These include a great mass of personal and local matters gathered from many sources. There are numerous biographical sketches, and considerable space is given to the principal statistics of the operation of the railroad from 1841 onward.

The book is printed and produced in very attractive form. It contains portraits of many men who were prominently connected with the road, and some interesting reproductions of old time-tables, tariff and similar documents.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Review of the World's Commerce During the Year 1899." Prepared by the Bureau of Commerce, Department of State. Washington; Government Printing Office. Pages, 182.

"Contents and General Index of the Transactions of the American Society of Mechanical Engineers." Volume I., 1880, to Volume XX., 1899. New York; published by the Society. Pages, 188.

"Les Roches et leurs Elements Mineralogiques." Par Ed. Jannettaz. Third Edition, Enlarged and Entirely Reviseu. Paris, France; J. Rothschild. Pages, 704; with 2 geological maps, 21 colored plates and 322 engravings.

"Statistics of the Trade and Commerce of Buffalo in 1899: Annual Report of the Buffalo Merchants' Exchange." Compiled by Charles H. Keep, Secretary. Buffalo, N. Y.; issued by the Merchants' Exchange. Pages, 134.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Tennessee Phosphate Industry.

Sir:—I think some attention should be called to the present conditions of the phosphate industry in Tennessee, which have not been fairly represented. The movement of phosphate rock from Tennessee has been slight so far this year, as the fertilizer factories have in most instances some stocks on hand and are using this condition of affairs to bear the market, and the miners holding firm to the above prices.

There is all told about 30,000 tons of rock on hand at Mount Pleasant, an inconsiderable amount, as it is a fact that very few of the companies are working their full quota of men, and also that there are only about six months more of this year in which work can be conducted in the Tennessee fields. Mining in the winter months has never been profitable, and work during that time will hereafter be discontinud, as was done the past winter. The new fields that have been reported and made conspicuous by glowing publications in the local papers, have been in almost every instance of no value, being productive of a rock with low percentage of bone phosphate of lime and high in iron and alumina. The undisputed fact remains that the truly commercial article is confined to Maury, Hickman, Sumner and Perry counties, and in very much more limited quantities than the general public is aware of.

Another point is that the brown rock mining in Tennessee is largely controlled by the weather. If there should be a wet and rainy summer, it will have more to do with cutting short the output than the present lack of interest by the buyers. From present indications, and from the fact that the last two summers have been dry, it is likely to be a wet season, and the fertilizer factory that has not been provided with a supply, on account of the management being too stingy to give miners a living price for their product, will find that it is necessary to procure its supply of acid phosphate from its more provident and liberal contemporaries.

Some of the fertilizer people last year bought or leased lands and undertook to do their own mining, thereby getting the rock at first cost. I notice, with few exceptions, that these people are willing to pay the market price for rock this year, leaving their holdings of land until all the phosphate lands are bought up by the "Trusts." As this is the age of "Trusts" and prices are made by the sellers, the phosphate rock miners will sooner or later have to join themselves into some combination to protect their interests. The present prices are little above the cost of production, and are not in keeping with the value of the product to users or the cost of production. S. C.

Nashville, Tenn., May 10, 1900.

The Manitou Lake Gold Mining Company.

Sir: Your Ontario correspondent referred in the "Engineering and Mining Journal" of April 28th to the sale of the Independence and Eclipse mines in the Lake of the Woods District, and as my name has been associated with the affairs of the Manitou Lake Gold Mining Company, the late owners, I deem it necessary to make a statement at this time, that the public may know the true situation.

In the month of January, 1899, a proposition was accepted from Wm. H. Cross, of Winnipeg, offering to place a milling plant upon the Independence, taking stock of the company in payment therefor. This transaction was the culmination of a very successful season of splendid development of this remarkable property. At this time everybody looked upon the Independence as one of the richest mining properties in western Ontario, and the stockholders were loud in their praise of the magnificent showing that had been made during this season of development. It was at this time that certain parties attempted to deprive the stockholders of this property, and instead of acquiring the property by purchase, they undertook to wreck the company by offering their holdings at about one-fifth of what the company was selling treasury shares for. The company still owed $5,000 on the Independence, which was held under option, and this furnished the weapon with which these parties intended to conquer the shareholders. Early in March, 1899, these people bought up the title of the Independence, subject, however, to the option held by me and in turn assigned by me to Cyrus Wellington, in trust for the company, so that if the company should be crippled and forced into default in the payment of this $5,000, they would, of course, get the property.

Everything under the sun was done to prevent the company from raising this money—suits were brought against the company and private stock in the company was advertised in the daily papers, stories were circulated on the streets that the property would be tied up for ten years, all of which had the desired effect of cutting off any income that might have been derived from the sale of treasury shares. Good friends advised me to compromise with these people, but I could not make myself feel that it was right or honorable to attempt to compromise with men who had undertaken such a dastardly outrage. With the help of friends I was enabled to raise the necessary capital, not only to pay the $5,000 due upon the property, but to continue development work until about June 1st. In the meantime shareholders began to hear that the title was in jeopardy, so rather than divulge my plans for saving the property to the shareholders, I was forced (morally speaking) to purchase several thousand shares of stock that had been sold for 10 and 25 c. per share; in each case I paid the holders exactly what they had paid for the shares, together with 6 per cent. interest for the time their money had been in the hands of the company. This required an outlay of something like $14,000, and in the meantime Mr. Cross, of whom we had bought the mill, became alarmed for fear his shares were of no value, so it became necessary to buy him out also.

It would have been hard indeed, under these circumstances, to have continued development work during this year, notwithstanding that to shut down the mine would completely destroy all chances of selling treasury shares in Eastern markets; therefore, it became harder for the company to relieve itself. Under the existing circumstances there was nothing left for the company to do but to sell the property and protect the treasury shareholders, and this is exactly what has been done. Every person who purchased treasury shares at 10 and 25 c. each is entitled to the same number of shares in the new company that now owns this property.

If the same energy that was required to save the property could be exerted in raising capital to carry on the continuous development of the property, the company would have been turning out gold bricks long before this. I trust this explanation will be satisfactory to the public, as it is entirely so to the shareholders. N. C. Westerfield.

St. Paul, Minn, May 10, 1900.

[Mr. Westerfield's letter itself shows that the statement of our Ontario correspondent, to which he refers, was substantially correct. It seems also strange that the investment company, which he represents, claiming $1,500,000 capital, should have so much trouble over the small sum of $14,000.—Editor E. & M. J.]

LAKE SUPERIOR IRON ORE SHIPMENTS.

The figures collected and published by the Cleveland "Iron Trade Review," showing stocks of iron ore on Lake Erie docks on May 1st, which is practically the opening of the navigation season, are given below. They show that at the beginning of the present season dock stocks of ore were the smallest since 1892, being but 1,720,656 gross tons, against 2,073,254 tons on May 1st last year. The tables show stocks on dock on May 1st, in 1898, 1899 and 1900, by ports, with the amount on dock at the close of navigation in 1897, 1898 and 1899:

Ports.	Close of Navigation			Opening of Navigation.		
	Dec. 1, 1897.	Dec. 1, 1898.	Dec. 1, 1899.	May 1, 1898.	May 1, 1899.	May 1, 1900.
Toledo	194,644	146,568	186,422	71,726	22,915	52,616
Sandusky	84,786	48,500	23,184	48,800	7,086	4,300
Huron	230,029	139,982	164,480	143,170	82,055	48,412
Lorain	317,509	324,034	337,822	158,797	168,646	126,212
Cleveland	1,478,355	1,175,970	1,200,806	853,776	472,946	386,291
Fairport	825,312	719,794	692,147	501,592	289,417	282,298
Ashtabula	1,835,694	1,732,671	1,902,598	1,031,441	855,691	678,789
Conneaut	360,895	288,101	468,808	69,047	6,115	8,649
Erie	484,871	439,167	361,335	236,485	95,626	97,894
Buffalo	111,660	121,620	192,681	53,081	72,757	35,195
Total	5,923,755	5,136,407	5,530,283	3,167,915	2,073,254	1,720,656

The total rail shipments from Lake Erie ports to furnaces in the winter of 1899-1900 appear by comparing dock stocks December 1st, 1899 and May 1st, 1900:

	Gross Tons.
On dock at Lake Erie ports, December 1st, 1899	5,530,283
On dock May 1st, 1900	1,720,656
By rail to furnaces in the winter of 1899-1900	3,809,627

The shipments to furnaces in the seven months from May 1st to December 1st 1899, together with the consumption by furnaces at Tonawanda, Buffalo, Cleveland and Lorain, receiving ore direct into their yards from vessels, amounted to 11,765,158 tons. Adding to this amount the shipments from December 1st last to May 1st this year—3,809,627 tons, as above—gives as the total shipments from Lake Erie ports to furnaces for the year ending May 1st, 1900, the record-breaking total of 15,574,785 gross tons. Of course this does not accurately represent the year's consumption of Lake Superior ores, but it helps to approximate it. These 12-months shipments in the past eight years have been as follows:

Year ending—	Gross tons.	Year ending—	Gross tons.
May 1, 1900	15,574,785	May 1, 1896	8,805,510
May 1, 1899	12,122,982	May 1, 1895	6,297,215
May 1, 1898	10,209,488	May 1, 1894	4,840,488
May 1, 1897	6,719,633	May 1, 1893	6,102,125

The stocks above given for this year are the smallest reported at Lake Erie ports on May 1st in any year since 1892.

COAL IN BORNEO.—A recent British report says that in British Borneo the only mines worked are at Muara, which export about 14,000 tons of coal annually. Coal is worked in the Island of Labuan, and its harbor is now an important coaling station. The output of coal in 1897 was 35,400 metric tons, valued at £18,536. The coal is stated to be very suitable for steamships, and it is used for tin-smelting at Singapore. The existence of coal in North Borneo has been proved, but it is not being worked at the present time. In Sarawak the Government works coal mines at Sadong and Brooketon. The former produces about 40,000 tons a year, and the latter 12,000 tons.

GOLD MINING IN CHINESE MANCHURIA.—Since last summer, says the London "Engineer," a gold mining industry in the hands of Russians has been developed in the Sungari region of Eastern Manchuria. About a year ago M. Mosskvin, a gold miner, of Semipalatinsk, visited the Sungari, and concluded an agreement with the local Chinese authorities for the purpose of working the mines of that region. Expert Russian workmen were sought at Orenburg and in the Altai Mountains, and the requisite mining machinery, hitherto unknown in that part of China, has enabled Russian mining enterprise to establish itself in the region in question. The returns from these mines have so far been very great. In the valley of the River Shagun millions of poods of auriferous earth lie on the surface of the soil; this earth was turned up many years ago, and has not been touched since then. The Chinese were accustomed to work this auriferous earth entirely by hand, and in the most primitive method. In the Sungari Mountains two Russian settlements are in full work. This mountain range is not only rich in gold sand, but it contains also immense deposits of coal and naphtha, and there is thus a very profitable opening for Russian enterprise. It is quite probable that in the near future other Russian capitalists will follow the example of M. Mosskvin, and the gold-bearing region of China will be overrun by Russians.

EL COBRE MINES, CUBA.

The accompanying illustrations are from photographs recently taken at El Cobre in Cuba. These copper mines, 12 miles west of the city of Santiago de Cuba, were discovered some 300 years ago. They were last worked about 1868. The main shaft is 1,200 ft. in depth, now filled with water. Nos. 1 and 2 show the ruins of the pump house over this shaft. No. 3 shows the remains of a primitive stamp mill and lixiviation plant. No. 4 shows a picturesque church at the mines. It is seen in the distance in No. 2.

An account written by Senor Raimondo Cabrera says that copper has been mined on a larger scale than any other of the mineral resources of Cuba, particularly in the Province of Santiago de Cuba. The town of Cobre takes its name from the adjacent mines, which were worked by a corporation known as the "Consolidado." These mines were discovered about the middle of the sixteenth century, but their working was reserved for itself by the Spanish Government, with the result simply of giving them over to various contractors. Subsequent to 1833, and after much tribulation and expense, the Consolidado Company discovered some large lodes, and this not only gave that enterprise a great impetus, but also stimulated competing enterprises, one of which undertook the development of a number of mines, under the ownership of an English syndicate, with a capital of $300,000, and named the Santiago Company.

1. PUMP HOUSE, MAIN SHAFT. 2. PUMP HOUSE. MAIN SHAFT.
3. REMAINS OF MILL. 4. CHURCH AT MINES.

EL COBRE MINES, NEAR SANTIAGO, CUBA.

The mines of Cobre, of which the machinery and outfittings were destroyed by the insurgents during the so-called Ten Years' War, and the workings wholly abandoned, were subsequently acquired, during the succeeding interregnum of peace, by the Cobre Railroad Company, which energetically undertook the re-establishment of the plant. The company constructed five iron bridges, equipped the workings with tramways, rolling stock and locomotives, importing the material requisite for the purpose, but the efforts thus put forth remained unproductive, and the enterprise was practically abandoned, solely because of the obstacles created by the administration. The exploitation of the mines has dwindled to the working of the tailings of the early rich outputs. Other veins are worked in a more or less primitive way, utilizing the waters which filter from the cavities of former workings, precipitating the copper by means of iron and thus obtaining the copper in a concentrated state.

The cupriferous zone of Santiago de Cuba embraces three divisions; the district of Coney, that of the Cauto, and the district of Cobre. The two former remained unworked; the owners of the mining rights appear to be content to preserve their franchises awaiting better times, having assured themselves of the existence in their concessions of veins of native copper, and of its sulphides, oxides and other forms.

COAL MINERS' WAGES IN GREAT BRITAIN.—A recent official report relating to the wages paid coal miners in Great Britain, says that the net percentage increase in coal miners' wages between October, 1886 and February 28, 1900, was 45 per cent. in Yorkshire, Lancashire and Midlands; 27½ per cent. in South Wales and Monmouthshire; 35 per cent. in Durham; 30 per cent. in Northumberland, 81¼ per cent. in West Scotland, and 72½ per cent. in Fife and Clackmannan.

GOLD IN THE PHILIPPINES.

Written for the Engineering and Mining Journal by Wm. Gilbert Irwin.

Scarcely had the campaign against Manila ended, in August, 1898, when the search for gold and minerals was begun at points on the Island of Luzon. At that time the army was composed largely of volunteer troops from the West, among them many old gold and silver miners, and while there were really nothing more than traditions among the people of Manila concerning precious minerals in the wild interior of the island, it was not long before the experienced miners in the army became convinced beyond a doubt that Luzon will ultimately become a factor in the gold mining world.

At first they were content with washing along the streams a few miles back from Manila, and nearly everywhere rich alluvial deposits were found. In September, 1898, Paymaster Wilcox made a trip through the interior of Luzon, and at places found what seemed to be rich quartz deposits. At these places, however, he was closely watched by the natives and was not permitted to make anything like a systematic examination. Through all the years the interior tribes have resented all attempts of the Spanish to discover the supposed mineral wealth, and in spite of the fact that this was the great object in view in all the colonizing indulged in by Spain three centuries ago, they were never able to discover the hidden treasures of the Philippines, although they never doubted of their existence.

Several months after Paymaster Wilcox made his trip into the interior, a party of soldiers, composed of old gold miners, made a trip up the Pasig and into the Monte Blanco region. Here, in the vicinity of San Juan, they found the wild interior tribes engaged in alluvial gold mining, and in spite of their crude facilities they succeeded in obtaining considerable quantities of gold. At places the prospectors obtained very satisfactory results, but, as in all former cases, they were closely watched by the natives, and finally they were compelled to return to Manila. A month or so later the Filipino outbreak came on, and for the time all thoughts of gold mining were dispelled.

While our troops lay before Caloocan, a town 4 miles from Manila, the soldiers at times washed gold from the little streams there, and at many places on the advance to Malolos good gold leads were found in the volcanic formations. At many places along the mountains similar deposits have been located, but until the island is pacified it is not probable that any great attention will be given to any kind of mining.

It may seem remarkable that in spite of the rich gold deposits which these islands contain, the Spanish were never able to discover any of the mineral wealth. It must be remembered, however, that the Spanish settlements were all confined to the coast, and that even there their hold was at times feeble. Of the many expeditions they sent against the interior tribes none were successful to any degree, and hence their knowledge of the interior was very meager.

Early last year an association was formed, known as the Philippine Development Association, with the main purpose of developing the mineral resources of the island. The organization was composed of several hundred former gold and silver miners whose terms of enlist-

ment in the army would soon expire. Under their agreement they were to re-enlist in the volunteer regiments then being organized, on condition that they be paid their full transportation money, which, in most cases, would amount to more than $500; or in Mexican money—the standard in the Philippines—this sum would be more than doubled. The proposition was accepted by the Government, and there are in the Philippines to-day several hundred experienced miners who may be expected to do much toward developing the mineral wealth of the islands as soon as they are finally pacified.

The organization is a co-operative one, and under its rules all the members will work for a common good until such a time as peace shall be fully established and the land laws are fully settled upon. Already there are representatives of a number of American mining syndicates on the ground, and, as soon as practicable, prospectors will be put to work in Luzon and in the other islands.

Under Spanish rule it was difficult to obtain concessions, and but one mining company ever did any work. This was an English concern, connected with the capitalists who built the Manila & Dagupan, the only railroad line in the islands. The work of this concern was wholly on the alluvial deposits, and as yet no efforts at quartz mining have been made.

As to the quality of Philippine gold, it is below the standard, but when refined, very satisfactory results are obtained. Already our Government has made assays of Philippine gold, and in Manila it is used by the native goldsmiths. At times the newspapers have published accounts of gold deposits in different parts of these islands, but from reasons which I have already stated there can be little truth in these, since no one has been able to conduct anything like satisfactory prospecting.

MINERAL PRODUCTS OF CALIFORNIA FOR 1899.

State Mineralogist A. S. Cooper reports the yield and value of the mineral substances of California for 1899, as follows, as per returns received at the State Mining Bureau in answer to inquiries made to producers:

Antimony, 75 tons	$13,500
Asbestos, 30 tons	750
Asphalt, 15,060 tons	308,130
Bituminous rock, 40,321 tons	116,097
Borax, 20,357 tons	1,139,882
Cement, 60,000 barrels	180,000
Clay, brick, 125,950 M.	754,730
Clay, pottery, 40,600 tons	42,700
Coal, 160,941 tons	420,109
Copper, 23,915,486 pounds	3,990,534
Fullers' earth, 620 tons	12,400
Gold	15,336,031
Granite, 128,924 cubic feet	141,070
Gypsum, 3,663 tons	14,950
Lead, 721,000 pounds	30,642
Lime, 299,854 barrels	314,575
Limestone, 30,769 tons	29,185
Lithia mica, 124 tons	4,600
Macadam, 323,590 tons	239,867
Magnesite, 1,280 tons	18,480
Manganese, 295 tons	3,165
Marble, 9,682 cubic feet	10,550
Mineral paint, 1,704 tons	20,294
Mineral waters, 1,338,537 gallons	406,691
Natural gas, 115,110,000 cubic feet	95,000
Paving blocks, 305 M.	7,861
Petroleum, 2,677,875 barrels	2,660,793
Platinum, 300 ounces	1,800
Pyrites, 5,400 tons	28,620
Quicksilver, 29,454 flasks	1,405,045
Rubble, 641,308 tons	547,025
Salt, 82,654 tons	149,025
Sand glass, 2,000 tons	2,000
Sand quartz, 1,000 tons	1,500
Sandstone, 56,264 cubic feet	103,384
Serpentine, 500 cubic feet	2,000
Silver	504,012
Slate, 810 squares	5,900
Soda, 10,000 tons	250,000
Total value	$29,313,460

In the previous year the total product was valued at $27,289,079, so that the increase for the year is $2,024,381. The total product of metallic substances for the year 1899 was $21,305,023, an increase of $1,281,989. This includes gold, silver, mineral paint, quicksilver, antimony, copper, lead, manganese and platinum. Silver is given in commercial value or amount received for it by producers.

The total value of non-metallic substances was $2,446,070, an increase of $343,998. This includes borax, coal, mineral waters, salt, asbestos, gypsum, magensite, pyrites, lithia-mica and fullers earth.

The total value of hydrocarbons and gases was $3,180,020, an increase of $109,426, including asphaltum, bituminous rock, natural gas and petroleum. The total value of structural materials was $2,382,347, an increase of $288,968. This includes brick and pottery clays, hydraulic cement, lime and limestone, macadam, rubble and concrete rock, paving blocks, marble, granite, sandstone, serpentine, slate, quartz sand and glass sand.

The relative value of the principal mineral products of the State is as follows: 1. Gold; 2. Copper; 3. Petroleum; 4. Quicksilver; 5. Borax.

There are 24,991 men employed in the industries represented in the above table, with the exception of the petroleum industry. In that branch so many new wells were being opened at close of the year and still unproductive, that it was found impossible to make a proper enumeration of the number of men employed. None are therefore credited to that industry.

The relative rank of the counties of the State, in point of mineral production, is given in the second table. In each case the value given includes that of all mineral substances combined produced in the respective counties for the year. Some counties produce in addition to gold and silver, five, six or seven other substances, while other counties which produce little or no gold or silver, produce in large quantities quicksilver, mineral oils, copper, lead, asphalt, structural materials, etc. The figures include aggregate value of all mineral products, including precious metals. These latter are based upon United States Mint returns for the year.

All the asbestos produced in California in 1899 was from Riverside County. Asphalt was produced in Fresno, Kern, Los Angeles, Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Clara and Ventura counties. Bituminous rock came from San Benito, San Luis Obispo and Santa Cruz. The borax yield was from Inyo, Kern, San Bernardino and Ventura. Brick clays were utilized in Alameda, Butte, Fresno, Humboldt, Kern, Kings, Los Angeles, Madera, Marin, Mendocino, Monterey, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Shasta, Sonoma, Tehama, Tulare and Ventura counties.

Pottery clay came from Amador, Placer and Riverside. All the hydraulic cement came from San Bernardino County. Coal was produced in Alameda, Amador, Contra Costa, Kern, Orange and Riverside. The copper was mined in Calaveras, Nevada, San Bernardino and Shasta countries. The pyrites were all from Nevada County. Granite was quarried in the countries of Madera, Placer, Riverside, Sacramento, San Bernadino, San Diego, Sonoma, Trinity and Tulare.

All the fullers' earth came from Kern County. Gypsum was produced in San Benito and Los Angeles counties; and lead was from Inyo, Mono and San Diego counties. Limestone was quarried in El Dorado, Kern, Mono, Monterey, Riverside, San Benito, San Bernardino, Santa Clara, Santa Cruz, Shasta and Bolano counties. San Diego County was the only producer of lithia-mica.

The principal macadam quarries are in Alameda, Los Angeles, Marin, Sacramento, San Benito, San Bernardino, Santa Clara, Santa Cruz and Solano counties. The magensite came from Napa and Santa Cruz counties; and the maganese from Alameda and Santa Clara. Marble was quarried in Amador, Los Angeles and San Bernardino counties.

Mineral paint was mined in Butte, Calaveras, Nevada and Stanislaus counties. The mineral springs which utilize the water commercially are in Butte, Colusa, Contra Costa, Fresno, Humboldt, Lake, Los Angeles, Mendocino, Monterey, Napa, San Benito, San Diego, Santa Barbara, Santa Clara, Shasta, Siskiyou, Sonoma, Solano and Tehama counties. Natural gas was utilized in Sacramento, San Joaquin and Santa Barbara counties. Paving blocks, or basalt, were quarried in San Bernadino, Solano and Sonoma counties.

The platinum came mainly from Trinity and Siskiyou counties. Petroleum was produced in Fresno, Kern, Los Angeles, Orange, Santa Barbara, Santa Clara and Ventura counties. Quicksilver came from Lake, Napa, San Benito, San Luis Obispo, Santa Clara, Sonoma and Trinity. Rubble was quarried in the counties of Humboldt, Los Angeles, Madera, Marin, Monterey, Sacramento, San Diego, San Francisco, San Luis Obispo, San Mateo, Solano and Sonoma. The salt came from Alameda, Colusa, Riverside and San Diego counties. The quartz sand came from Riverside. Sandstone was from Colusa, Los Angeles and Yolo counties. The serpentine was from Los Angeles. slate from El Dorado, Mariposa and Shasta; and soda from Inyo counties.

As far as "banner" counties are concerned in the different mineral products, the following is the record for 1899, with the values of material from the county named: Alameda leads in salt ($137,088), manganese ($3,090), macadam ($66,512), and coal ($242,109). Amador leads in marble ($7,925); Butte in mineral paint ($9,900); El Dorado in slate ($4,500); Inyo in lead ($28,135) and soda ($250,000); Kern in fullers' earth ($12,400); Los Angeles in gypsum ($14,250), petroleum ($1,409,356) and serpentine ($2,000); Napa leads in magnesite ($17,130) and quicksilver ($598,320); Nevada leads in gold ($2,171,510) and pyrites ($28,620); Placer in granite ($61,525); Riverside in asbestos ($750), pottery clay ($16,800) and quartz sand ($1,500). San Bernadino has the most borax ($1,106,000), cement ($180,000), limestone ($14,810) and paving blocks ($4,000); San Diego the most lithia-mica ($4,600). San Francisco leads in rubble ($221,230); San Joaquin in natural gas ($84,880); Santa Barbara in asphalt ($121,160). Santa Clara utilizes the most brick clays ($170,455), while Santa Cruz produces the most bituminous rock ($70,569) and lime ($176,893). The bulk of the copper comes from Shasta County ($3,565,023), and this county also leads in silver product ($196,213).

1. Shasta	$4,661,980	20. Sierra	450,474	39. Marin	81,150
2. Nevada	2,231,898	21. El Dorado	425,346	40. San Luis Obispo	68,548
3. San Bernardino	1,859,351	22. Santa Clara	391,940	41. San Mateo	58,225
4. Los Angeles	1,729,964	23. San Diego	381,215	42. Lassen	28,898
5. Tuolumne	1,650,880	24. Plumas	381,166	43. Tulare	20,810
6. Amador	1,593,720	25. Santa Barbara	318,528	44. Tehama	19,800
7. Calaveras	1,303,188	26. San Benito	290,495	45. Monterey	17,378
8. Placer	1,177,812	27. San Francisco	275,694	46. Solano	16,937
9. Kern	1,027,366	28. Riverside	272,848	47. Stanislaus	11,769
10. Siskiyou	991,871	29. Santa Cruz	251,392	48. Kings	11,550
11. Mono	749,556	30. Humboldt	235,274	49. Mendocino	8,788
12. Trinity	715,595	31. Sacramento	233,755	50. Del Norte	4,450
13. Napa	701,416	32. Lake	204,103	51. Colusa	1,420
14. Ventura	613,450	33. Yuba	189,939	52. Yolo	384
15. Mariposa	565,636	34. Sonoma	142,330	Undistributed	485,802
16. Alameda	508,799	35. Contra Costa	135,113		
17. Butte	504,795	36. Madera	115,620	Total	$29,313,460
18. Fresno	497,234	37. Orange	112,077		
19. Inyo	473,851	38. San Joaquin	111,880		

THE RAY COPPER MINES, ARIZONA.

Written for the Engineering and Mining Journal by Alexander Hill.

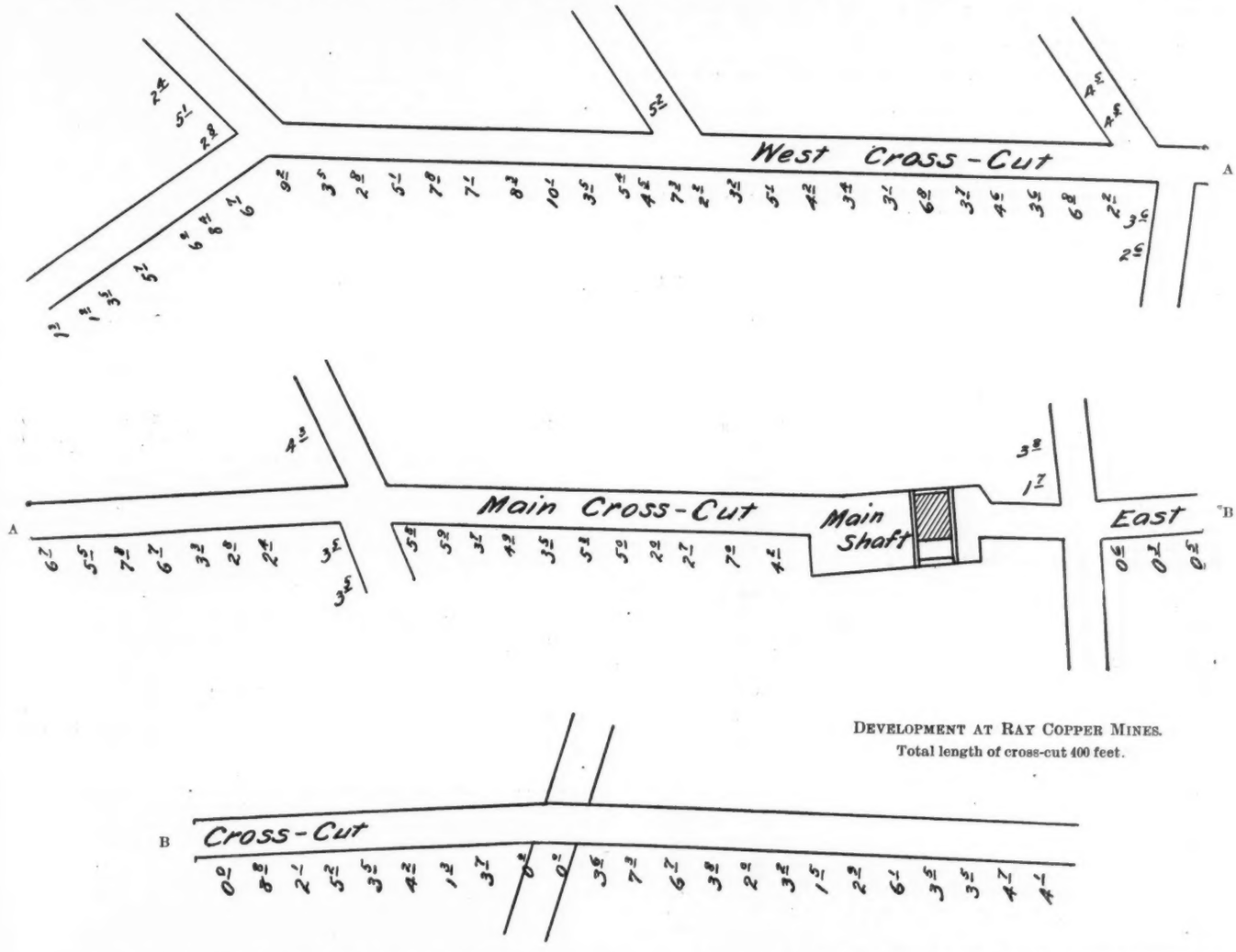
During the past two years a very considerable amount of work has been done in the Mineral Creek Mining District, Pinal County, Arizona, where large bodies of copper ores have been developed, while veins of carbonate of lead have been exposed also. A great number of mining claims have been located, many of which show good prospects. Mineral Creek flows into the Gila River a little below the post station of Riverside, at a point named Kelvin, where the concentrating plant of the Ray Copper Mines, Limited, is located. Red Rock, a station on the Southern Pacific Railroad, lies southward from Kelvin and is distant 43 miles. Florence, the county seat, lies west about 26 miles.

Ores of copper are to be seen on the south bank of the Gila River, but no serious work has been undertaken. The ores are principally carbonates and oxides in a diorite formation. About 5½ miles up Mineral Creek from Kelvin a broad belt of quartz porphyry crosses the creek, continuing in an easterly direction toward Globe and in a westerly direction toward the once famous Silver King. This belt varies in width from 500 to 2,000 ft. and is easily distinguished by the red coloration caused by oxide of iron stain. At the point where claims owned by the Ray Copper Mines, Limited, are situated, the valley of Mineral Creek forms a sort of basin having a width of about 2 miles, the hills rising to considerable height on either side; on the north side of the creek the hills rise abruptly to a height of over 2,400 ft. above the creek bed, while on the south side the slope is more gradual and the elevation not so great by 600 or 700 ft. On the north side of the creek rocks of volcanic origin are noticed, while on the summit of the hills limestone beds are overlying quartzite rock. Here fissures occur, filled with iron oxides impregnated with carbonates of lead carrying a little silver.

On the south side of the quartz porphyry belt schists are observed in some places, as well as diorite, while granite is to be found at some little distance. At various places within the quartz porphyry belt bunches of diorite are found, some of which are of considerable extent. These bunches all contain copper in the form of carbonates, oxides and metallic flakes. The richest of these diorite masses is at the Ray Mine, where some 10,000 to 80,000 tons lie above the quartz porphyry. This small mass has been very thoroughly investigated and sampled, the copper contents being not less than 5 per cent.

At numerous spots along the creek beds of conglomerate consisting of masses of water-worn stones and boulders cemented together by copper carbonates have been found. In some instances these beds carry as much as 15 per cent. of copper. They were doubtless formed by the action of copper sulphate liquors on gravel and sand of a calcareous nature. Numerous surface croppings of copper, both in the form of carbonate and sulphides, are seen all over the quartz porphyry belt, as well as adjacent to it.

The Ray Copper Mines, Limited, have devoted all their energy to the exploration of the quartz porphyry formation. At the Ray Mine, where the principal works are located, a shaft has been sunk to the depth of 344 ft. From this shaft crosscuts approximately at right angles to the general direction of the belt have been run at three levels. The longest of these, which is at the depth of 223 ft. below the surface, is over 400 ft. in length, and both ends are still in ore. The whole of this crosscut shows copper in the form of narrow films or veins and and specks of sulphides disseminated through the mass mostly in the form of glance, but occasionally in that of pyrite. The average of this crosscut from end to end, calculated from samples taken every 5 ft., is 4.26 per cent. of copper. The two lower crosscuts have not been driven so far, but they both show ore of the same class and of a somewhat higher percentage in copper. From these main crosscuts drifts are driven east and west, all of which carry the same class and value of ore.



DEVELOPMENT AT RAY COPPER MINES.
Total length of cross-cut 400 feet.

Up to the present, greater depth, whether obtained by sinking or by driving under rising ground, has invariably caused an increase in the copper contents of the ore. A leaching action is noticeable, which has extended to some distance below the surface, and where this occurs a diminution of the copper contents is the invariable result.

The crosscuts mentioned above are being continued toward the south, but not at present toward the north, on account of their proximity to Mineral Creek. When a depth of 200 ft. below the creek bed is reached the crosscuts will be driven northward as well as toward the south. West of the Ray shaft numerous other shafts have been sunk, all of which, with the exception of one, have cut ore of good quality.

The Sharkey shaft, near the westerly boundary of the company's claims, has a depth of 210 ft. Ore assaying 6 per cent. copper was cut at 25 ft. from the surface. At the bottom of this shaft, crosscuts of 60 ft. were driven without encountering the limits of the ore body. The ore cut by this shaft and crosscut averages 6 per cent. of copper.

The Humboldt shaft, which is the only one yet sunk which is not in ore, is 500 ft. east of the Sharkey. It is located near the center of a most interesting basin, the Sharkey being sunk near the rim, and all indications point to ore being encountered in depth. The shaft is sunk

through a very much oxidized material and has a depth of 200 ft. A drift has been carried from the Humboldt toward the Sharkey and ore assaying 3 per cent. of copper has just been cut at a distance of 250 ft. from the Sharkey.

The Tribunal shaft, which is distant 2,400 ft. in a southerly direction from the Sharkey, was, owing to the nature of the country, sunk on the edge of the ore body in diorite, but cut various strings of pyrites in depth. A short crosscut at 100 ft. in depth encountered quartz porphyry assaying 3 per cent. The main crosscut, from which much is expected, is to be driven from this shaft at 200 ft. depth, in the direction of the Mathias shaft. The surface indications between the Tribunal and Humboldt shafts are excellent and assays running as high as 3 per cent. can be obtained close to the surface.

Other shafts, one of which—the Lincoln—has a depth of 90 ft., are sunk between the Ray and the Tribunal, and all show good ore, assaying over 4 per cent. of copper. East of the Ray shaft a small tunnel has been run in the quartz porphyry, showing ore of 4 per cent., while still further east a shaft known as the Poorman has been sunk on a rich stringer of ore carrying much native copper. The vein, however, is narrow, and the surrounding rock carries little copper, mostly in the metallic form. The shaft is close to Mineral Creek, and possibly its proximity to the action of water may have had some effect.

The Ray Copper Mines, Limited, are devoting their energies to the development of that portion of the property dominated by the Ray shaft, as they consider that here alone they have sufficient ore to warrant an extraction of over 500 tons per day when they are ready to treat it. A large air compressing plant is installed and a suitable hoisting engine. The ore is hoisted to the adit level, the mouth of which is 50 ft. above the railway connecting the mine with the concentrating mill situated at Kelvin. The ore is passed over grizzlies, the larger portions being crushed in a Gates crusher, then falling all together into bins, from which it is easily loaded into the railway cars. The system of mining employed is pillar and stall, but when the exact limits of the ore body are determined, possibly the caving system so successfully employed in the Michigan iron mines may be adopted. Very little timber is required, as the ore stands well.

The railroad is 2 ft. 6 in. gauge, and has an even down grade to Kelvin, a distance of 5½ miles. The locomotive was built by the H. K. Porter Company and the cars are wooden, side-dumping, carrying about 4½ tons each. From 60 to 70 tons can be transported at each trip, and the time employed in loading, running to Kelvin, unloading and returning will be about one hour.

The mill, which was built by the Gates Iron works, is an excellent one, and the site is almost ideal. An abundant supply of water is obtained from the Gila River. The ore previously crushed at the mine is dumped into bins, from which it is passed over trommels perforated with 1-in. round holes, the oversize being recrushed and the undersize sized by a series of trommels, ¾-in., ½-in. and ¼-in. holes, after which, along with the oversize from a Pratt-Wethey vertical conical screen, it is jigged on several two-compartment iron jigs. The jig tailings and middlings are recrushed in Bradley pulverizing mills, after which the product is classified in Meineck classifiers, as is also the fine product from the Pratt-Wethey screen. The four classified products are treated on 12 Hallett stratifying tables, while the slimes are conveyed to spitzkastens and treated on eight Hallett tables. Any middlings from the Hallett tables are recrushed in a tube mill, after which they are classified and treated on the tables reserved for slimes.

The object of treating the ore in such a coarse size on jigs is to separate large flakes and pieces of glance, of which it was found, by actual experiment in a small mill, that there was a considerable quantity, which could thus be separated in a large size, and so save loss which would inevitably take place were such pieces ground fine before being concentrated. Ore was treated on Hallett tables at Aspen before these were decided upon, and the results were most satisfactory.

The power is supplied by four 50-H. P. Weber distillate engines, the fuel being supplied from Los Angeles. It was decided to erect these engines and use distillate, as it was believed a constant supply of this material could be obtained; but in the event of there being any scarcity of distillate, they could be converted to the use of generator gas for a sum of $50 per engine. The capital outlay required for the generating apparatus will only become necessary when there is any danger of the supply of distillate falling short. There would seem to be no fear of this at present.

The mill is expected to treat 250 tons per day and should commence operations in about 30 days' time. The ore concentrates well, the concentrates produced in the old mill averaging over 30 per cent. of copper. The policy of the company is to erect another mill at an early date, and as soon as some 600 tons of ore are under treatment per day to erect the necessary matting and converter plants. Up till that time the concentrates will be sold as such in the best market.

The construction of a railroad to the Southern Pacific Railroad or to the Santa Fe Railroad at Phœnix is a necessity, and the company is taking steps to this effect. Some such line would pay well, as there is quite a considerable amount of traffic. The cost would not be great, as the country is fairly flat. The Ray Company has experimented with a traction engine with satisfactory results. It has been found that one engine can haul on a rough road a net weight of 30 tons a distance of 25 miles in 10 hours at a cost of $20 to $25. With four traction engines, 30 tons weight could be hauled daily over a distance of 45 miles at a cost of from $5 to $6 per ton, all return freight being carried free. If there was the same quantity of freight both ways the cost per ton would be from $2.50 to $3. The objection to this method, however, consists in the delay which takes place in wet weather, and also because any increase in quantity over 30 tons would necessitate more engines.

As the company anticipates a large output in the near future, the extent and value of the mine justifying such an expectation, it is very wisely doing all it can to carry into effect the railroad scheme.

The accompanying sketch shows a plan of the workings on the 50-ft. level in the main crosscut only. The small figures indicate the percentage of copper found by assays of ore taken from different points in the crosscuts.

THE PARAPARA IRON ORE DEPOSITS IN NEW ZEALAND.*

By H. P. Washbourn.

The Parapara iron-ore deposit is situated in Golden Bay, about 5 miles south of Collingwood, New Zealand. This bay is a large and almost land-locked harbor, holding a somewhat similar position at the northern end of Cook Strait that Wellington does at the southern end. The ore (limonite) is a deposit in a limestone basin or sincline, some 4 miles long by 3 broad in the widest, dipping to the north, or seaward. The ore usually described as the deposit is really only the eastern edge of the basin, and becomes visible at a distance of 1½ miles from deep water. The hill rises about 200 ft., and the creek has cut a gorge into the deposit for that depth without cutting through the ore. The width of ore outcropping on the surface is from 10 to 13 chains, and shows in large masses for several miles southward, or inland. The iron-ore gave by analysis 53.38 per cent. of iron, and is free from phosphorus. The limestone of the basin is a very pure carbonate of lime; the impurities amount at most to less than 2 per cent.

The coal-field at the northern end of the bay has been receiving attention of late, with the result that there is now one mine working a 4-ft. 8-in. seam of good hard coal, proved to extend over a considerable area, and there is another mine being developed. These are within 10 miles either by land or water of the iron deposit, and the West Coast coal-fields are also within a few hours' steam of it. The iron-ore could be delivered at a furnace for 35c. per ton, and the limestone at 25c. per ton. In each case it would only be open-quarry work. At Parapara for iron, ore, limestone and coal, each good and in large quantities, are placed in close proximity to each other in a most favorable position for distributing the product.

The New Zealand Hematite Paint Company also makes an iron paint from Parapara ores. By analyses this paint contains from 83 to 87 per cent. of ferric oxide. In making this paint the ore is calcined, then crushed in water passing over tanks to catch all gritty matter, and then, as red water, passes into settling-boxes, where it remains till it is of the consistency of cream. In this state it is put on a kiln and dried. It afterward goes through rollers to pulverize it, and is then weighed and bagged. Although the paint is more expensive to make by this process than the dry method, the quality is superior, as all grit is removed from it. The present plant, which is driven by water-power, could be easily extended. This paint has been found to stand in exposed positions there where no other paint would, and it will probably have a much more extended use when its fire-resisting quality becomes better known.

Industries at Parapara have been handicapped from want of roads and shipping facilities, but these will be removed as time goes on.

SAULT STE. MARIE CANAL TRAFFIC.—Owing to the early opening of navigation this year a considerable traffic passed through the Sault Canal prior to May 1st. The number of vessels was 427, carrying 473,482 tons of freight. Mineral freights included 43,242 tons anthracite coal, 111,499 tons bituminous coal, 204,563 tons iron ore, 674 tons copper and 25,277 barrels salt. In 1899 there was no freight passed before May 1st.

MINING IN GREECE.—The last war in Greece marks a step in industrial advance, especially mining, the Government now granting concessions without difficulty. Mine working is carried on actively in the provinces of Attica, Thessaly, Milo and Boeotia, lignite being obtained from Attica and Carysto, while coal is mined in Corinth and Phthiotis. At the Piraeus there are nine large foundries and works turning out stationary engines, locomotives and steamships. These particulars were quoted from the "Montan Zeitung," by M. Jules Francois for the benefit of the Sociéte des Ingénieurs des Mines du Hainaut.

MINERAL IMPORTS AND EXPORTS OF SPAIN.—Imports of fuel into Spain for the three months ending March 31st included 438,428 tons coal and 51,139 tons coke. Imports of metals included 946 tons pig iron, 1,138 tons wrought-iron, 15,368 tons steel and 333 tons tin-plate. Exports of minerals were, in metric tons:

	1899.	1900.	Changes.
Iron ore	1,966,048	1,921,630	D. 44,418
Copper ore	226,613	239,347	I. 12,734
Zinc ore	19,880	19,444	D. 456
Lead ore	2,004	949	D. 1,055
Salt	50,554	41,985	D. 14,969

Exports of metals included 7,474 tons pig-iron (8,225 tons, 1899); 7,267 tons copper (8,052 tons, 1899); 36,595 tons lead, against 42,908 tons in 1899.

IRON IN MADAGASCAR.—Some iron is made in the old way by the natives of Madagascar. In the district of Emyrne there are large deposits of iron ore. Some of this shows by analysis 65 per cent. metallic iron, but this is a hard ore and the workmen prefer a softer ore, which runs from 50 to 55 per cent. iron. This soft ore is crushed, and washed in a stream of water, the residue being free from impurities. This ore is then placed in a furnace 2 ft. to 2 ft. 3 in. in diameter and 2 ft. 6 in. to 3 ft. high, which is built mainly from the debris from a furnace used in a previous melting, and is luted with clay inside. A hole near the bottom serves for the escape of the slag, while a second on the opposite side admits a tuyere made of refractory clay, which is connected in turn to two bellows. The charge of the furnace is started with a layer of charcoal, which is lighted, and this done, ore is added; this is followed by more charcoal, and this, again, by

*"New Zealand Mines Record," March, 1900.

ore, and so on until the furnace is full. The ore is always placed in a ring, the central portion being occupied entirely by a column of fuel. The total charge of a furnace is about 200 kgs. and the reduction takes from seven to eight hours, the return being about 75 kgs. of metal, which has still to be refined. This is accomplished in a similar furnace, where the masses of iron are heated to a bright red, and the scoria and other impurities can then be expelled by hammering, the final forging being effected by a gang of six men—a bellows man, a forge master, and four strikers. The iron thus made is sold at the rate of about $21 per 100 kgs. at the forge.

MINERAL PRODUCTION OF HUNGARY.

The mineral production of Hungary is given by the official reports as below for the full calendar year. The figures are in metric tons, except gold and silver:

		1897.	1898.	Changes.
Coal	Tons	1,072,549	1,239,498	I. 166,949
Brown coal (lignite)	"	3,863,311	4,206,694	I. 343,383
Total coal	"	4,935,860	5,446,192	I. 510,332
Briquettes	"	27,022	31,781	I. 4,759
Coke	"	7,218	8,190	I. 972
Iron ore	"	1,427,405	1,607,477	I. 180,072
Iron pyrites	"	42,696	58,079	I. 15,383
Pig iron	"	419,900	469,403	I. 49,503
Copper	"	213	153	D. 60
Lead	"	2,526	2,304	D. 222
Antimony	"	209	745	D. 536
Nickel and cobalt	"	31	.....	D. 31
Silver	Kegs	26,789	18,798	D. 7,991
Gold	"	3,067	2,768	D. 299

There was exported in 1898 a total of 499,785 tons of iron ore, and 8,027 tons manganiferous iron ore; the latter being included in the iron mined, in the table.

WORKING TWIN SEAMS OF COAL.—II.

Written for the Engineering and Mining Journal by W. S. Gresley.

(Continued from page 561.)

Example No. 10.—This deals with a twin seam on a 30° pitch. Each split is about 25 ft. thick, and the dividing rock consists of about 5 ft. of sandstone, with pebbles. The method of opening is by shafts, the coal being reached by tunnels or levels driven about 50 ft. apart verti-

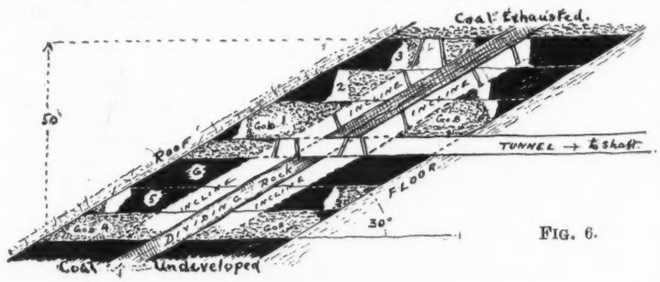


FIG. 6.

cally. The coal is developed and worked by heights or lifts, measuring about 50 ft. as measured vertically (see Fig. 6). The tunnels intersect the lift at about the middle of its height. Gangways or headings are driven on the level course right and left of the tunnel, those in the top split being driven next the dividing rock, while those in the lower split pass along just beneath that bed of rock. The distance to which these headings are driven depends upon local conditions. Liability to gob fires limits them to a few hundred feet. At suitable intervals along these headings inclines are driven uphill in the coal to the limit of the height in that direction—the gob of the next height above in the case illustrated, marked in the sketch "coal exhausted." Other inclines or slopes are driven to the dip—to the lower limit of the height. The ventilation having been established by air courses and chutes connecting with the headings, a special outlet to surface being provided at one end of the district, the taking out of the coal commences by driving across the coal beds from the several headings started off the inclines so as to divide up the height into a convenient number of horizontal slices. The number of slices in this case is seven, three above that on the same level as the tunnels, and three to the dip of the tunnels. The first slice to come out is the tunnel-level slice, then those marked 1 and 4, that is to say, the work of extraction of the coal from these horizons precedes that in the horizons marked 2 and 5, and these latter are kept in advance of those marked 3 and 6.

The coal is worked out in narrow rooms driven at right angles off the levels, those in the top split working toward the roof, those in the bottom coal being worked in the opposite direction. The width of the rooms is about 8 ft., and between each a rib of coal of about the same width is formed and taken out (when the room is finished) in the opposite direction to that in which the room was worked. The close gobbing or complete-stowage system is practiced. This enables very nearly all of the coal in both splits to be taken out. The work proceeds simultaneously in both uphill and dip divisions of the lift. That in slices 2 and 5 goes on on top of the packing (gob) of the slices 1 and 4 respectively; and the packing of the exhausted slices, 2 and 5, forms the floor of the working places in slices 3 and 6, which are the last slices to come out.

The manipulation of the mine cars is performed by small compressed-air engines (operating steel ropes), located near the middle of the section. With these engines the loads are raised out of the dip inclines and the material used for gobbing (brought into the mine through the tunnel from surface) is raised into the slices above the tunnel.

It is not possible to show the detail of the workings in Fig. 6; this is merely a sketch section intended to give, in a general way, the method pursued under the conditions obtaining.

The fresh air is taken into the bottom slices, works its way upward through those above, and finally returns, fouled, by a sloping opening on the floor of the seam to the surface.

Example No. 11.—This relates to breast-and-pillar working on a 70° pitch (see Fig. 7), which shows a breast being worked in each of the splits, one breast vertically over the other, or, rather, the breast in the top split will be directly above the other one in the bottom split when they have been worked a little more. In this instance the dividing stratum is a very strong sandy shale about 4½ ft. thick. The

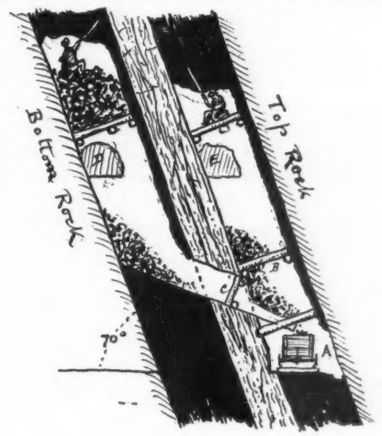


FIG. 7.

gangway, A, is driven in the top split and serves for both splits, the coal from the bottom one passing through a sloping hole in the dividing rock onto the loading chute or apron placed directly at foot of the top-split breast, the flow of coal from both breasts to the wagons being regulated by batteries B and C. D and E show the position of the air headings or monkey gangways driven parallel with main gangway, A. The timber batteries seen just above these headings are at the bottom end of the breasts, upon which the coal, as mined at the faces of the breasts, lies until run out, and on top of which the miners work. In order to keep the proper quantity of loose coal in the breasts until the miners have finished them, the surplus is drawn off through the chute as required. The breasts are about 27 ft. wide and the pillars about 24 ft. If the latter are taken out, or even partially removed, those of the top split are worked slightly in advance of the lower ones, the loose breast coal being run off to keep pace with the pillar work. If close gobbing is required, the material is put in through a chute from the gangway above and held in check by strong timbering.

2. Modified Longwall.

Example No. 1.—The coal was liable to take fire spontaneously; each split was about 5½ ft. thick and the dividing bed was about 1½ ft. of strong shale. The coal contained two or three bands of shale which the miners picked out and left in the gob. The lay of the seam was level. The method of working was by sections or panels of limited width and depth. The entries were all driven in the bottom coal and protected by pillars. The bottom split was worked first in each panel by long-wall advancing, the roadways being about 100 ft. apart. In order to secure the top coal in good condition it was carried by stout cribs or cogs built from floor to roof in the gob. These cribs were filled solid with rubbish and set up in regular order all over the area worked—usually a panel contained about five acres. On finishing the bottom split the top one was then entered along the inner line or end of the panel, and the coal in it worked backwards off the dividing bed to the entry pillars. The tracks laid up in the first working served for the second working, the dividing rock being taken down where the roadways ran. By careful management, steady working and judicious use of timbering and refuse, a large area of coal was thus exhausted and at a considerable depth. Much of the success obtained was due to the convenient way in which the exhausted areas caved in, and so relieved adjoining panels in course of being worked, from too much squeeze.

Example No. 2.—Twin seams, Fig. 8, composed as in the following section, at a depth of 500 to 700 ft., lying flat or nearly so, and with the bottom split very much given to spontaneous combustion.

		Ft. ins.	Ft. ins.		
Top split	Black shale		2 0		
	K Coal	6			
	Black fire clay		3		
	J Coal	2 0			
	Fire clay		2		
	I Coal	4 2			
Divider,	Carbonaceous shale		3 0	6 ft. 8 in. coal.	5 in. refuse.
Bottom split	H Coal	4 0			
	Shale		2 2		
	G Coal	1 8			
	Fire clay and coaly streaks		1 8		
	Slate		10		
	F Coal	2 0			
	Black shale		2		
	E Coal	11			
	Black clayey shale		6		
	D Coal	2 0			
	Fire clay and coal streaks		3		
	C Coal	1 6			
	Parting of shale		1		
	B Coal	5 0			
	Parting of black slate		2		
	A Coal	2 3			
	Fire clay floor	....	....	Coal. 17 ft. 4 in.	Refuse. 5 ft. 10 in.

This seam is opened out by driving main headings in the coal benches A, B and C. The airways are usually driven in the top coals, I and J. The top split is mined first. Headings are driven up to the limit of the panel or section to be taken out, coal marked K being left up to form a top. Crosscuts are made at suitable intervals for ventilation. As soon as the headings are up, a long face is opened along the boundary and the pillars are worked back in a continuous face to the main road pillars and there stopped. The area or extent of the worked kept going in this split depends upon the output required. It is worked on the retreating plan because there is not sufficient refuse in the seam, and the nature of the roof (shale) prevents its use for pack building or carrying the roadways in the gob. In working the top coal the bench marked I is undercut in the black shale—the dividing measure in this instance, when two or three cuts or slices have been taken off and loaded out, the bench J is supported by props, and packs P, composed of refuse, above and between which, as the work proceeds and settlement of the

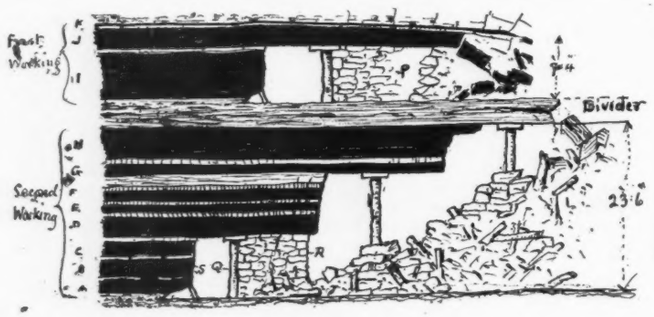


FIG. 8.

top takes place, the coal J (and so much of bench K as well as will fall and not get buried in the gob) is removed.

It is not until the working the top split has become pretty thoroughly settled—caved and squeezed—that the opening of the bottom coal or the second working is commenced. This period is from two to three years. This split, being very liable to gob fires, is worked in panels of quite limited size. Usually three parallel headings are driven up in the benches A, B and C to the boundary of the district and at right angles to the main gangway. On reaching the line, the full width of the panel, say 225 ft., is opened by driving across in the bottom benches. The face thus commenced is undercut in the fireclay floor and two or three cuts are worked off in the direction of the main gangway. Stout posts, Q, are set under the coal, D, which is also supported at suitable intervals by packs formed of refuse (see R, Fig. 8). As the working face S moves forward the benches D, E and F are dropped between the packs and the coal over the latter is cut out by bearing in and blowing down. As this work advances the benches G and H become undermined, and, in order to bring them down or prevent them falling too suddenly and heavily, are judiciously posted off the rubbish as shown in Fig. 8. Lastly, to prevent too rapid fall of the dividing measure (and with it the gob of the top split workings), it is also posted as occasion requires or as ability to do so (in such awkward position as it is) offers. Practically, then, the bottom split is removed

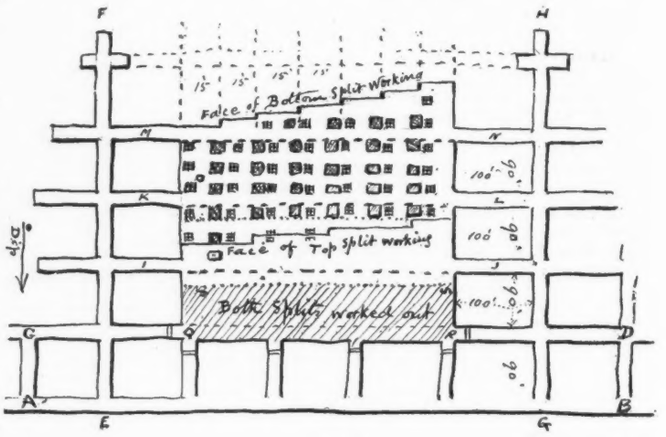


FIG. 9.

however, being worked simultaneously in the same panels. The method of accomplishing the latter operation is to carry the top coal on wooden cogs or chocks and small pillars of the bottom coal to aid the cogs, during the short period of time between the working of the bottom and the top splits. To explain more in detail: Pairs of levels or headings, A, B and C D (Fig. 9) are first driven and crosscut for ventilation and subsequent haulage purposes at suitable intervals. Rise headings are then driven at right angles to C D (see E, F and G H) about 500 ft. apart. Thirdly, at every 90 ft. or thereabouts on right of E F and opposite thereto on left of heading G H levels are started and driven across the panel, meeting on their way the working faces in the bottom coal working up the pitch, which faces were opened off the upper side of headings C D at Q and R. This range of faces is taken in widths or steps of about 15 ft. in breadth each (see plan Fig. 9), each room being served, in respect to the conveyance of the coal mined in it, with a short self-acting jig or incline, the maximum length of which is 90 ft.

—the distance from one cross-heading to the next one higher up the section (see I to K, Fig. 9). All the coal in the bottom split within the area I, J, R, Q, is taken out through Q and R to the incline or headings E F and opposite thereto on left of heading G H, levers are started and by way of levels I and J; and so on in succession until the upper limit of the panel is worked to. In order to keep the workings open while the various slices, as we may call them, of the panel are being worked, small pillars of coal (bottom split) are formed and left as needed in each room and in addition thereto stout cogs or timber chocks, filled solid with refuse and small coal, are built in regular order all over the section. Both cogs and coal pillars are indicated in sketch plan, Fig. 9.

To work the top split, the faces in the lower coal are allowed to reach, say the line K L, before a commencement is made; this is done first along a line 10 ft. to the dip of the first level made above the main heading C D (see dotted line P S, Fig. 9). By the time the opening is made in the top coal it has become settled or weighted down very con-

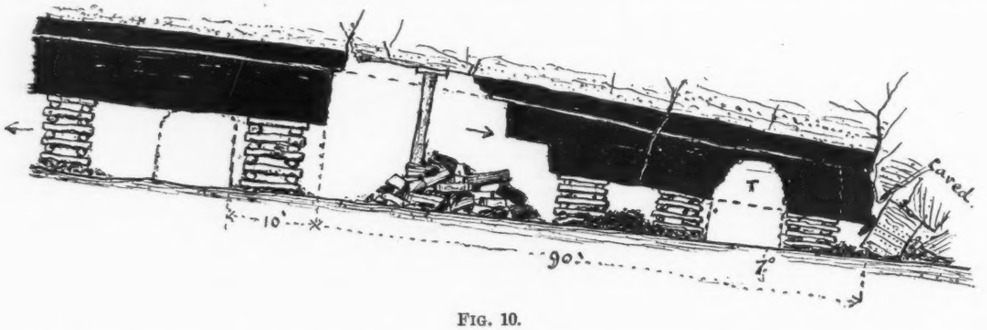


FIG. 10.

in three operations—by the working faces, the positions and forms of the middle and upper one varying according to circumstances.

The best results by working in this manner are secured by regular and rapid working, making a clean sweep of the top split and abandoning it at least two years before attempting to enter the bottom split. If not rapidly mined by panels, fires are sure to give trouble and coal be lost due to squeezes, creeps, etc. Between each 225 ft. panel a solid 225-ft. block of coal in the bottom split is left, and these blocks are not worked until the exhausted or abandoned panels have had time enough given them to become squeezed close or otherwise safe in respect of fire, etc. It is claimed that all of the top split is mined and close on 90 per cent. of the bottom one.

In another colliery, the changes in the bands of refuse make it advisable to use the stratum of shale between coals F and G for the divider, but as regards the methods of working each split, there is practically no difference, it being chiefly a matter of detail to suit differences in stratification of coal and clay.

Example No. 3.—The salient points in this case are the working of the bottom split first, on the advancing plan, and in panels of limited area, and the top split following, but on the retreating plan; both splits, siderably on top of the chocks and has squeezed the small pillars of coal left between them. The top split is conveyed to the main haulage ways down the short inclines to level Q R. The working face advances downhill (see section, Fig. 10, which is supposed to show the general aspect and condition of the work as between points O and P on the plan, Fig. 9). It shows the bottom split exhausted; the top one resting or rather gradually settling down upon the timber cogs; the squeezed condition of same; the levels or haulways crossing the panel as between I to J and K to L; and the mode of removal of the top split on the retreating system or in the opposite direction in which the lower one was taken. This section also shows the fallen top in the exhausted slice P, S, Q, R on plan; and how, in consequence of settlement of top coal, the hauling road T has had to be made partly in that split to give height.

Thus, the self-acting planes used for the bottom split rooms are used a second time for the lowering of the top split. The ability to take out the top split successfully with but little loss of coal, largely comes from its solidity or tenacious character; the good top over the seam, and the evenness and regularity with which the cribs and the pillars of coal interspersed among them, give way or adapt themselves to the settlement of the cover. The panels are kept comparatively small in size

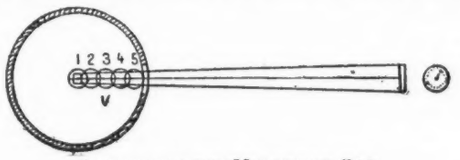
because liability to spontaneous combustion is a factor in the operation.

As to the extraction of the main incline and other pillars, the modus operandi differs but little from that followed in the panels. To make it plain in regard to how the top split is proceeded with after the first slice, P, S, R, Q, has been gotten down, the next slice above, measuring about 300 by 90 ft., is taken in similar manner to that already described, namely, commencing 10 ft. below ci roadway K L, and working off the coal backward downhill to line P S, the product being removed through the level I J to the inclines E F and G H, as the case calls for. The second slice of bottom coal having been exhausted, is cut off from the rest of the mine, and the third slice entered upon along a line 10 ft. to dip of line M N. The 10-ft. ribs of coal, referred to in connection with starting to work each 90 by 300 ft. of a panel in the top split, are removed when the finishing of the next slice above takes place. The full thickness of these two splits is but about 10 ft., but as the character or kind of the coal in each is very different, each kind had to be worked and loaded out separately.

(To be concluded.)

DIRECT MEASUREMENT OF GAS FROM BLAST FURNACES.

The question as to the quantity of gas issuing from the mouths of blast furnaces which, still containing combustible matter, may still be utilized, is an interesting one to ironmasters. It is generally estimated that the production of one ton of pig iron corresponds to about 4,500 cubic meters of gas. This estimate, however, is only obtained by mathematical calculation. Herr Georges Rosenweiler of Dresden, says the London "Colliery Guardian," has devised a method of obtaining the desired information by means of a simple apparatus designed to permit the measurement of the average speed of the flow of the gases in a conduit, and, the diameter of the latter being known, to deduce therefrom the volume. Herr Rosenweiler's anemometer (see illustration) is a kind of metallic stick, the handle end terminating in a dial which indicates the speed in seconds. The inner end terminates in an open sphere within which turns a wheel fitted with mica wings or vanes. It will be readily understood that the number of revolutions of the wheel is transmitted to the dial on the outer end of the stick. To obtain the desired result several readings must be taken by altering the position of the sphere, step by step, from the center to the wall of the conduit. In the case shown in the illustration, $V_1 = 5$ m., $V_2 = 4.8$ m., $V_3 = 4.7$ m., $V_4 = 4.6$ m., $V_5 = 4.5$ m., from which for the average speed V aver-



INSTRUMENT FOR MEASURING GAS.

age = 4.7 m. An anemometer of this kind serves not only for the estimation of the total quantity of gas produced at the mouth of the furnace, but also the respective consumption of the gases in the various apparatus and plant in which they are utilized, such as boilers, hot-air stoves, etc., and also by difference, the absolute losses of these gases, often much greater than imagined.

PRESENT MINING CONDITIONS IN THE KLONDIKE.

Special Correspondence of the Engineering and Mining Journal.

It is expected that the Yukon Territory will produce more gold this year than in any of the three preceding years. The output will exceed $20,000,000, while that of last year was estimated to be about $18,000,000. The yearly production is counted from October 1st of one year to September 30th following, comprising the winter work, which is the most important, and the summer work. Most of the work done in winter is in the creek claims, while the benches and hillside claims are principally worked in summer. But there is a tendency on the part of a good many creek claim owners to operate their mines in summer, several advantages being claimed by the change.

On account of the high royalty (which is 10 per cent. of all the gold produced by a claim, except on the first $5,000), it is difficult to calculate exactly the output for any year. The miners have too great an interest to conceal as much as possible what amount of gold they get out of their claims when they have 10 per cent. to pay.

The greater output of gold this year is due to the introduction of machinery on a large scale, in the shape of thawing machines and mechanical appliances for raising the pay dirt from the bottom of shafts, and for removing the muck from the top of the pay streak. Machinery has decreased greatly the cost of production of gold, the actual cost being about 25 to 33 per cent. only of the first cost on several claims. The placers were at first worked in a very primitive manner. The higher wages and the cruder methods of the first years increased costs so that some claim owners did not deem it profitable to handle any dirt that would not yield at least 5 cents to the pan. Machinery has now given value to claims the working of which would not have paid at first. The claims are worked more systematically. All the gold-bearing gravel is now washed, and not only the rich spots, on a good many claims.

The Canadian Government has of late been paying more attention to the Yukon District, and has revised the laws. As placers were hardly known to exist in Canada before the great discovery of August 18th, 1896, on Bonanza Creek, 13 miles from Dawson, it was difficult for the Government to make perfect regulations at once. What increased the difficulty was the great distance of the placers from Ottawa, the absence of telegraphic communications and the inadequate means of transportation.

Among the changes in the laws for the better we may note the greater encouragement given to discoverers by exempting them from paying any royalty, and by giving them 1,000 ft. of ground measured along the creek, instead of 500 ft., at at first. The limits of claims are now better defined, avoiding thereby much litigation.

The Government has spent much money during the past year in building roads to the principal creeks. This, of course, has decreased to a great extent the cost of transporting goods, machinery, etc. In fact, heavy machines could formerly be transported to the nearest creeks only.

Coal has been found within 25 miles of Dawson, and it may cost not more than $12 a ton in Dawson. As wood is getting dear, coal will prove to be a bonanza for the mine-owners, and it is expected to replace wood soon.

A good many hydraulic concessions have been granted of late, but none has been in operation yet. Everybody is eagerly waiting for the results.

None of the many quartz veins that have been staked and recorded has been developed yet. If some prove to be valuable it will be a great boom for the country.

The great discovery on Bonanza Creek in 1896 has been extended to the neighboring creeks, but no new district has been found since. The Territory is undoubtedly rich, but little thorough prospecting has been done far from Dawson.

PETROLEUM DISCOVERY IN EGYPT.—United States Consul-General Long writes from Cairo, March 14th, 1900: "I have to report the discovery of petroleum on the Nile, as the result of recent experiments in borings by a syndicate composed of American, English and Egyptian capitalists, at the head of which is Sir Elwin Palmer, upon whom I called yesterday for detailed information. This gentleman, while admitting the discovery of oil, informed me that he could not furnish data at the present time, but hoped to be able to do so within the next two or three months."

FORCED DRAFT IN BOILERS.—W. S. Hutton, in his "Steam Boiler Construction," states that "the economy that may be obtained by combustion with forced draft in a steam boiler is due to the increased rate of combustion and increased efficiency of the heating surfaces produced by it, resulting in increased boiler power. The increase of power obtained depends principally upon the quantity of air brought into intimate contact with the fuel in a given time, but the power of the boiler may generally be increased from 40 to 100 per cent. by the application of well arranged forced draft."

IRON MINING IN ONTARIO.—The Ontario Bureau of Mines reports that there is considerable activity in iron ore mining in Eastern Ontario, the values of ore being raised on account of the increasing demand on the smelters within the province for all grades of pig iron. Iron ores, both hematite and magnetite, are being raised or shipped from nine deposits in North Hastings, from three deposits along the line of the Kingston & Pembroke Railway and from several well-known deposits in Lanark County. A large deposit of magnetite is being opened up west of Marmora by A. W. Coe of Madoc, with every prospect of securing shipping ore.

PETROLEUM IN ALGERIA.—The Western oil basin of Algeria comprises fourteen zones rich in petroleum, bearing northwest and southeast for a length which in the southern zone appears to exceed 200 kms. The nature of the rocks, which is in every respect similar to that of the deposits in Baku and Galicia, holds out great hope for oil working in Algeria; and, again, there are petroliferous outcrops in the province of Constantine. These particulars are given by M. Henry Neuburger, who, charged by the Governor with a geological exploration of Algeria, has reported upon the first part of his exploration—that in the province of Oran. Applications for concessions of the above-named deposits have already been made by several financial companies.

THE LARGEST SCHOONER.—Steamships are taking most of the carrying trade nowadays, but the big schooner still does a good deal of work along the Atlantic Coast, especially in carrying coal. The "Marine Journal" of Cleveland, Ohio, says that H. M. Bean of Camden, Me., is building a six-masted wooden schooner for J. G. Crawley of Taunton, Mass. The vessel has the unique distinction of being the first six-master and the largest in the world. The keel of the boat was laid recently and it is expected that she will be ready to be launched on August 1st. Her dimensions will be: Length, 300 ft.; beam, 48 ft.; depth, 22 ft. He has also on the stocks a five-master, keel 250 ft., beam 46 ft. and depth 22 ft., to be launched in September. There was launched from his yards lately a four-masted schooner, length 210 ft., beam 45 ft., and depth 20.8 ft.

REWARDS FOR FRENCH MINERS.—The December part of the "Annales des Mines," but lately to hand, records the acts of courage and devotion last year in connection with accidents in mines and quarries, with the official recognition of the same, the list including the names of five miners and subordinate officials who particularly distinguished themselves. At the Montrambert Colliery, in the Loire district, Jean Louis Matignier, overman, who saved a miner buried by a fall, was awarded a silver medal; and honorable mention was accorded to Jean Marie Meunier, miner, who rescued five comrades overtaken by a fall at the same colliery. At the Besseges Colliery, in the Gard, Louis-Germain Balazun, miner, who ran great risk in rescuing a comrade buried under a heap of coal thrown forward in consequence of a fire-damp explosion, was awarded a silver medal. Honorable mention was accorded to Master-miner Suzaret, at the Grand Combe Colliery, also in the Gard, who rescued a miner buried by a fall; and Charles Ebly, miner, of Saint-Etienne, who specially distinguished himself by saving another miner buried by a fall at the Beaubrun Colliery, in the Loire, was awarded a bronze medal.

ABSTRACTS OF OFFICIAL REPORTS.

Athabasca Gold Mines, Limited, British Columbia.

The report of Mr. E. Nelson Fell, general manager, covers the period from April 13th, 1898, to January 1st, 1900. During this time active development work in the mine has been prosecuted, and although the mine was not in a condition to furnish a sufficient supply of first-class ore to the mill, yet the operations for the year realized a profit of $31,504.

During the year, 1,275 ft. of development work has been done, as follows: 720 ft. of drifts, 360 ft. of cross-cuts, 165 ft. of raises and 30 ft. of winzes. There were 5,150 tons of ore mined and sent to the mill, 20,000 tons of waste mined and thrown over the dumps, and a further large quantity of waste holed in the stopes from which the ore has been removed. This work has been carried on entirely by hand labor in hard ground. About 40,000 tons of ore and waste have been handled at a total cost of $74,824, including all cost of labor, material, supervision and sundries; or at a cost of $1.87 per ton.

The character of the vein is unusual. The strike of the vein on the surface is approximately at right angles to the strike of the vein in the main tunnel, and the explanation of this unusual feature seems to be connected in some manner not yet fully understood with the numerous faults which cause frequent displacements of the vein. If it is possible to conceive of these faults having a greater and greater throw as they proceed farther from some central point, an explanation would be obtained of the situation which seems to prevail.

In all, 5,350 tons have been handled on the tramway at a cost of $1,090, or 20 1/3 cents per ton, which figures include all cost of supervision. Besides handling the ore this tramway also transports all the supplies, provisions and lumber required at the mine, the cost of which is included in the above figures.

The 10-stamp mill worked during the year 353 days and 6 hours, and was idle during the year 11 days and 18 hours. For causes connected with the mill there were only 2 hours delay from the beginning to the end of the year, and including all sources of delay, except clean-ups, only 3 days and 20 hours delay. This is a record for which those who are responsible for the care of the mill are entitled to credit.

Van Anda Copper and Gold Company, British Columbia.

The statement made by H. W. Treat, president and manager of this company of Texada Island, B. C., dated December 31st, 1899, covers the entire period since the inception of the company in April, 1896.

In order to thoroughly understand the balance sheet and general statement of assets and liabilities it is necessary to refer to the early history of the company's organization.

The capitalization was placed at $5,000,000, in shares of $1 each. This stock was divided between the promoters and owners of the properties and treasury stock, 3,000,000 shares being appropriated by the owners and promoters, for which the property consisting of some 800 acres of Crown granted mineral claims on Texada Island was transferred to the company, while the other 2,000,000 shares were placed in the treasury for development purposes.

Although but little criticism was made relative to this capitalization at the time of organization, yet it was very soon demonstrated that such over-capitalization had been a mistake, and it became absolutely necessary, in order to obtain funds to carry on work of development, to sell this treasury stock for whatever price it would bring, the result being that $54,667 has been realized from the sales of the entire block. Not only had this entire amount been expended previous to March, 1899, but that it was considered advisable about that time to issue $75,000 worth of bonds, in order to pay up outstanding indebtedness, and to have funds to meet the expenditure necessary to erect a proposed smelter and carry on the work of developing the mines on a systematic and business-like basis. The installation of these permanent improvements, which have been carried on during the past year, has not only consumed all of the available capital in the hands of the company a year ago, but has caused the floating liabilities to amount to $195,644.

In order to meet these liabilities and provide funds to cover any financial difficulties that might arise, an additional issue of $225,000 in 6 per cent. gold bonds, running 10 years, dated February 1st, was authorized at the annual meeting of the shareholders, held February 3d, 1900. It appears from the balance sheet that $57,007 cash has been advanced by Mr. Treat, which is included in the floating liabilities.

The following is a statement of the smelter returns from July 15th, 1898, to December 31st, 1899: Total ore smelted, 4,133 tons, yielding 442,005 lbs. fine copper, 9,522 oz. fine silver, 1,444 oz. gold; total value smelter products, $99,484. Deducting contents of 595 tons of ore purchased, containing 82,563 lbs. copper, 2,246 oz. silver, 170 oz. gold, value $13,694, shows contents of 3,538 tons of Van Anda ores to be 359,442 lbs. copper, 7,276 oz. silver, 1,270 oz. gold; value, $85,790. This is a value of $24.24 per ton of ore containing 6.32 per cent. copper, 2.06 oz. silver, 0.486 oz. gold.

In January, 1896, there were 619 tons of ore taken to smelter. The receipts were $24,929, the expenses $20,905, and the profit for month $4,024. In February 749 tons of ore were taken to smelter. Receipts were $22,880, expenses $20,017, and profit $2,863.

The number of tons of ore in sight is estimated at 16,500 tons in the Copper Queen Mine and 13,333 tons in Cornell Mine.

Golden Horseshoe Estates, Limited, Western Australia.

The report just issued by this company is the first of the series, as the present company was formed on March 1st, 1899, and the report covers the period of ten months from that date until the end of the year. The company, however, is merely a reconstruction of the Golden Horseshoe Gold Mining Company, which since 1894 has been operating the property of that name in Kalgoortie, Western Australia. The reconstruction was arranged because the £1 shares in the old company (the capital of which was £100,000) stood at over £30, and it was considered better to form the present company with a capital of £1,500,000 in 300,000 shares of £5 each, so that the actual and normal values of the shares should be more nearly equal. The past year has been a very successful one, both as regards output and developments. The mine is almost the only large producer in the district that has not come to the end of its oxidized ores. It is now well known that the leading Kalgoorlie mines have exhausted their richer surface ores and that they are in difficulties with regard to the mode of treatment of the lower grade ores, and the sulphides and tellurides that come with depth. The Golden Horseshoe, however, has not yet arrived at this point of its history, and it is not improbable that such an acute crisis as is being experienced by the other mines may not be experienced in this case.

During the 10 months in question the output of gold was 85,194 bullion ounces gold, which was valued at £335,952. The stamp mill treated 32,659 tons of ore with a yield of 64,055 oz., 410 tons of concentrates were shipped to smelters and yielded 2,604 oz.; while the cyanide plant treated 15,408 tons of tailings with a yield of 18,535 oz. The total expenses, both in Australia and London, during the same period amounted to £88,335, so that there was a very large proportionate profit of nearly a quarter of a million pounds. Out of this, dividends absorbing £225,000 have been paid, the rate being 15 per cent. for 10 months.

The mine manager estimates that there are 129,809 tons of oxidized ore in sight averaging 1¾ oz. per ton, and that there are also 22,000 tons of low grade oxidized ore containing about 0.4 oz. per ton. During the first part of the period under review there were only 20 stamps working and latterly there were 30 stamps, but in a short time there will be 50 stamps in operation. The rate of crushing is nearly 4½ tons per day per head, so there is enough oxidized ore in sight to keep the mill in operation for two years. In the earlier days of the mine the ores were richer than the present average, in facts shoots of 4 oz. per ton and over were worked. No such shoots are now met with.

At the present time there is a good deal of gold lost in the slimes, but new plant is being put up for their treatment and no doubt a more complete recovery will be made when it is in operation. It is found also that fine grinding is necessary for complete extraction of the gold from the tailings so the tailings are to be sent through grinding and amalgamating pans before going to the cyanide plant. Additional cyanide plant for the tailings is in course of erection, and within a few months complete plant will be provided for handling the whole of the tailings and slimes from 50 stamps.

The sulphide problem is being attacked in a businesslike way. Most of the other Kalgoorlie mines exhausted their oxidized ores before they troubled about the sulphides, and consequently have got into a panic and have adopted rashly all sorts of processes, some of them wholly untried and some of them of doubtful value as regards their application to the ores in question. The horseshoe is taking time by the forelock and has already started experimental tests. The sulphide ores are being opened up satisfactorily, but no estimate can as yet be given as to their extent and average value.

The directors report that last summer they appointed Mr. J. W. Sutherland general manager.

Alaska Mexican Gold Mining Company, Alaska.

The report of this company for the year ending December 31st, 1899, shows that the operations at the mines on Douglas Island, Alaska, continued in the usual way. The total earnings were $349,098 and the expenses $286,764, leaving a profit of $62,334. The balance from previous year was $59,641, making a total of $121,975. Dividends amounting to $72,000, or 8 per cent. on the outstanding stock, were paid, leaving a balance of $49,975. There were 166,054 tons of ore mined and milled from which there was saved $231,841, or $1.40 per ton in the mill. There were 3,053 tons of concentrates—sulphurets—saved and treated, yielding $115,574, being $37.85 per ton of sulphurets, or $0.69 per ton of ore milled. The total was therefore $347,415, or $2.09 per ton.

The receipts and costs in detail were as follows:

	Total.	Per ton.
Bullion sold	$347,415	$2.0922
Interest received	1,682	0.0101
Total receipts	$349,097	$2.1023
Mining, 166,054 tons	$187,145	$1.1270
Milling and concentrating	49,411	0.2976
Chlorinating 497 tons sulphurets	4,971	0.0299
Sulphuret expenses on 2,949 tons	25,741	0.1550
General expenses, Douglas Island	5,412	0.0326
San Francisco office expenses	2,404	0.0145
London office expenses	551	0.0033
Paris office expenses	179	0.0011
Consulting engineer expenses	903	0.0054
Bullion charges	2,192	0.0132
Construction and repairs	7,855	0.0473
Total expenses	286,764	$1.7269
Net earnings	$62,333	$0.3754

Development work done during the year included 302 ft. shaft sinking, 823 ft. drifting, 91 ft. cross-cutting, 534 ft. raises, 99 ft. winzes and 363 ft. intermediate drifts; a total of 2,112 ft. The ore in sight at the close of the year was 367,000 tons. The map appended shows the condition of the property at the close of the year.

The report says: "The adit level has not been extended in either direction during the year. The western end is now about 200 ft. from that end of the property. The ore developed by the last 150 ft. of the drifts is too low in value to warrant its extraction at present. Some good ore still remains to be taken out of No. 3 pit, and a larger quantity that will yield a small profit, can be taken from No. 1 and No. 2 pits. The unworked ground lying between No. 1 and No. 3 pits is of doubtful value. The eastern end of the level is about 1,200 ft. from the eastern boundary; toward the end of the drift the vein pinched and finally disappeared. Two ore bodies are known on the surface of this eastern unexplored part of the property, one very wide, over 200 ft., but containing only a trace of gold wherever sampled, the other, presumably not so large and assaying where sampled $1.50 per ton.

"On the 110-ft. level during the year the west drift has been driven 257 ft., and is now within about 60 ft. of the boundary. A new stope, No. 6, has been started in this portion of the level, which, although in

poor ore at first, improves as height is gained. The east drift has been advanced 146 ft., most of this distance being in vein matter too narrow to stope. The same thing has occurred here as overhead in the adit level, the vein gradually narrowing until lost in the slate. The east stope is worked out with the exception of a small bunch of very good ore near the adit level now being extracted.

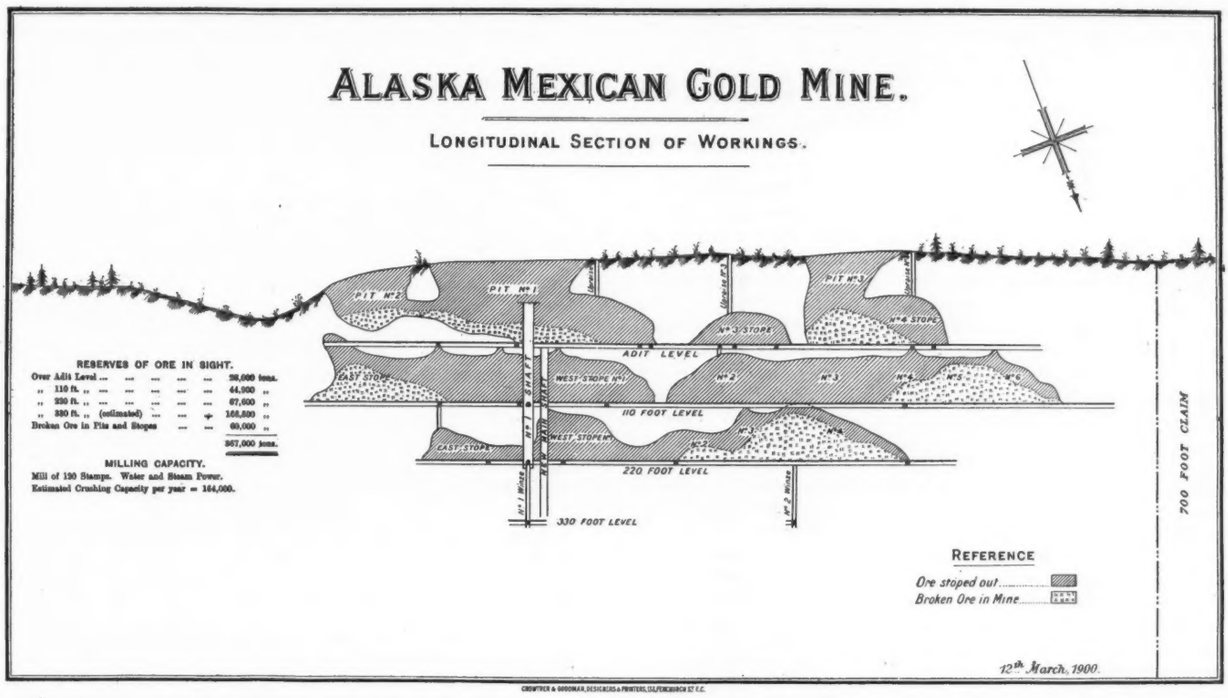
"On the 220-ft. level the west drift has been driven 246 ft., the first 50 ft. being in payable ore about 90 ft. thick, the remaining distance is in barren vein stuff of unknown thickness. There are at present indications of a change in the character of the rock at the face of the drift, which may lead to an improvement. The east drift has been extended 30 ft. with the same final result as on the upper levels. It is probable that a fault having a slight angle with the strike and dip of the vein exists at this end of the mine, and that the ore bodies found on the surface to the east belong to the regular formation and may improve in value with depth. A footwall drift has been started on this level, under the east stope, which, while necessary in order to secure the ore lying in a bulge in the footwall of the stope, is in the best position to prove above points mentioned. There are three available blocks of ore of good quality remaining between the 110 and 220-ft. levels, one over the east stope, and one over the No. 2 stope, and one over No. 3 stope.

"On the 330-ft. level during the year No. 2 winze has been sunk from the 220-ft. level to the 330-ft. level, where a cross-cut to the hanging wall was made. The vein was found to be 65 ft. thick, and to have an avarage assay value of $4.88 per ton. In the previous year No. 1 winze was sunk to the same level 480 ft. further east, and the cross-cut there proved the vein to be 25 ft. thick, and of an average value of $5.87 per ton. It is expected to commence sending this ore to the mill in June or July next.

"During the last half of the year a three-compartment vertical shaft, No. 2, has been sunk to a depth of 302 ft. At the 330-ft. level the first station will be made, and a tunnel driven to the vein, a distance of 250 ft. It is intended to hoist all of the ore through this shaft in self-dumping skips which will deliver directly into the crusher, in place of the present more expensive way of caging the cars to the surface, and then tramming them to the crusher. This change will be of material benefit to the mill, as, owing to the thorough mixing of the ore in the long chutes underground, it will have to deal with a more uniform mixture of rock than at present. The engine house and head gear for the shaft are completed ready for the engine, which is to be delivered at the mine April next.

The mill ran an equivalent of 357 1/12 days for the full mill of 120 stamps, out of a possible 363 days, crushing 166,054 tons of ore, or 3.87 tons per stamp per day. A number of cam shafts have broken during the year, due to battery posts being loose; repairs have been executed which it is hoped will remedy the trouble. A boarding house capable of accommodating 250 men has been built. It was made larger than was necessary for the employees alone, so that those of the Alaska United Company could also be accommodated in it. The pipe line and power ditch have been kept in good repair. A Riedler pump has been purchased and placed in commission on the 220-ft. level; it is giving entire satisfaction. The boilers have called for considerable attention during the year and the question of renewing at least three of them should be considered. The average number of men, including Indians, employed per day for the year was 160, and the average amount paid each man, including the cost of board, was $3.24 per day. There were five accidents, resulting in the loss of two lives."

MINERS' STRIKES IN GREAT BRITAIN.—A recent official report states that in Great Britain in 1899 there were 110 disputes in the mining and quarrying industry, as compared with 129 in 1898. In 1899 46,520 persons were directly and indirectly affected.



RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

GAS LEASES AND INDIANA STATUTE.—A lease of oil and gas lands provided that it should commence at the date when signed, and should terminate when natural gas should cease to be used generally for manufacturing purposes in H., or on failure to pay or tender the rent agreed on within 60 days after same became due; and as part consideration, the lessees agreed to pay $100 each year for each gas well drilled, producing gas in paying quantities—payments to begin and to become due as to each well on its completion, and to continue thereafter annually during the lease. Until the lessees drilled a gas well they were to pay annually a rent of 50c. an acre; and if wells were not drilled within 5 years from date, it was to be raised to $1 per acre. Should any other gas well be put down on the tract of land other than those stipulated, the other party was to be relieved or released from payment of rent. It was held by the court that as no definite time was fixed for the running of the lease, it was a tenancy from year to year, as provided by the law of Indiana (Burn's Statutes, 1894, section 7,089), and hence was terminable at the end of any year.—Diamond Plate Glass Company vs. Echelberger (55 Northeastern Reporter, 233); Appellate Court of Indiana.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like will be reproduced whenever possible. Specimens should be of moderate size and should be sent prepaid; we cannot undertake to return them. If analyses are wanted we will turn specimens over to a competent assayer, should our correspondent instruct us to do so and send the necessary money.—Editor E. & M. J.)

131.—Carnotite.—According to a Denver paper, there is on exhibition by the Colorado Bureau of Mines at Denver an attractive display of this mineral which came from the Yellow Bird group of claims in Montrose County, Colorado, where it occurs in cavities or associated with malachite and azurite. This is the only locality known where the mineral is found. It occurs as a yellow crystalline powder or in loosely cohering masses easily separated by the fingers, intimately mixed with a quartzose sand. A recent analysis made by Geologist Hillebrand demonstrated the presence of uranium to the extent of 52.28 per cent. and vanadium 17.80 per cent. The analysis also disclosed potassium, 5.32 per cent.; sodium, 0.07; magnesium, 0.17, and iron, 3.36. The Yellow Bird group was at one time the property of Gordon Kimball, but it recently passed into the hands of a French syndicate, which is erecting a plant to treat the mineral.

132.—Telluride Ores.—The high values in gold and silver frequently carried by tellurium compounds and the fact that certain tellurides resemble other common ores, there being, for instance, little difference in appearance between argentite, silver sulphide and hessite, silver telluride should cause the prospector to put little trust in appearances. When heated before the blow-pipe a telluride gives off dense white fumes of tellurium oxide. These fumes are odorless, distinguishing them from fumes of arsenic or selenium. If a large chunk of such mineral

is heated in a blacksmith's forge, tellurium volatilizes and gold present, will collect and exude in globules from the surface of the rock. A wet test for tellurium is to take a little of the powdered mineral, add a few drops of concentrated sulphuric acid, and heat in a porcelain dish. If tellurium is present a beautiful purple color will appear. Tellurides of lead, bismuth, nickel and mercury are known as well as tellurides of gold and silver and these tellurides when roasted may show no gold. Native tellurium vaporizes entirely. Telluride of mercury is easily recognized by roasting a particle in a glass tube, when the mercury volatilizes and condenses in minute metallic drops in the upper end of the tube.

At Cripple Creek the principal gold-bearing tellurides are sylvanite calaverite and petzite. Sylvanite is the most characteristic, and handsome specimens have come from the Independence, Portland, Moon, Anchor and Anchoria-Leland mines. It is a double telluride, containing gold and silver, an average composition being 28 per cent. gold, 16 per cent. silver and 56 per cent. tellurium. Sylvanite is a brilliant silvery-white mineral, having a characteristic crystalline habit to which it owes its other name, "graphite tellurium," the arrangement of the crystals resembling Arabic lettering.

Calaverite is the simple telluride of gold containing when pure 44.5 per cent. gold and 55.5 per cent. tellurium, but it usually carries as an impurity from 2 to 3 per cent. of silver. When pure it is of a bronze yellow color. It is the characteristic mineral of the rich ores in the Kalgoorlie District, West Australia, and beautiful specimens have been taken from the great ore shoot in the Lake View Consols, and from the Great Boulder, Associated and other mines. The mineral has about the color and appearance of iron pyrite, but is much softer, and can be easily cut by a knife. Pyrite also usually occurs in cubic form, while calaverite is generally massive. At Cripple Creek the best specimens so far found have come from the Work Mine. Petzite, like sylvanite, is a telluride of gold and silver, the silver being to the gold in the proportion of 3 to 1. Its color is steel gray to iron black, tarnishing readily. In the upper levels of most gold mines, within the reach of surface waters, the tellurides are decomposed and the gold liberated. At Cripple Creek certain mines, such as the Pike's Peak and Garfield Grouse, on Bull Hill, afforded specimens of native gold, the dull brown lusterless appearance of which was a puzzling variation. At Kalgoorlie, likewise, a brittle spongy variety became known as "mustard gold." In each instance, when such a specimen is scratched with a knife or burnished, the bright gleam of pure gold is apparent. These varieties of native gold are directly tracable to their origin from tellurides, the gold often retainng the form of the original mineral. Such pseudomorphs of gold after sylvanite are common in the ores of Cripple Creek and are often of great beauty. Below 100 to 400 ft. the unaltered tellurides appear. At a further depth, from 500 to 700 ft., the ores become more complex, because of the increasing percentage of baser minerals, chiefly iron pyrites, but including also galena (sulpnide of lead) and stibnite (sulphide of antimony).

133—W. J. G.—The specimen you send is not a petroleum product, nor does it contain more than traces of copper. It contains a high percent. of water. It is probably not a distinct mineral at all, but may be hydrous aluminum silicate containing considerable iron oxide.

134.—F. A. M.—Tripoli.—The white powder contains enough silica to be called tripoli. It is of fair color and might bring, when screened, $15 per ton at New York. For a purchaser in St. Louis write to the Wormser Filter Plate Company, 122 Pine Street.

135—The borate fields of Ventura County, California, are producing fine specimens of colmanite, pandermite and hydroboracite.

136—Native Gold.—Some fine specimens of wire gold are reported as being taken from the Columbia Mine, near Baker City, Oregon. Pretty specimens of gold in talc have been found, it is stated, by W. H. Storms on the Tunzi Ranch, near Ione, Amador County, California.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Calcined Magnesite.—Can any of your readers inform me to what extent, if any, oxide of magnesium (MgO) prepared from magnesium carbonate by burning off the carbonic acid gas, will hydrate or take up carbonic acid gas from the atmosphere?—A. N. S.

Answer.—A special property of magnesium oxide or calcium magnesite is that it will not slack or hydrate on exposure to the air. This is generally accepted; but if any of our readers can give facts to the contrary we shall be pleased to hear from them.

Mine Fans.—Should a mine fan be set over a shaft or at end or side of same?—Danny.

Answer.—The fans should not in any case be placed over the shaft, but should always be at a safe distance from it, and should be so arranged that it cannot be destroyed by any explosion or fire in the shaft.

Gold in New Jersey.—I have seen some accounts of gold mines lately discovered in the northern part of New Jersey. Have gold mines ever been worked in New Jersey?—Sussex.

Answer.—Gold has been found in New Jersey—as it has or can be found in most places—in very minute quantities, but never in sufficient amount to pay for working. Several people have started gold mines in New Jersey, but no one has ever succeeded in getting out any gold. Some years ago a "mine" was located near Pompton, in Passaic County, and a mill built near Newark to work the ore, but nothing came of it. The same may be said of alleged discoveries made near Highbridge in Hunterdon County and in the Longwood Valley in Morris County.

Graphite.—About what is the price per ton of commercial graphite? Who are the users? What is the purity necessary for a commercial product?—C. E. H.

Answer.—Quotations for graphite vary widely, according to its quality. The prices will be found in the "Engineering and Mining Journal" weekly. In speaking of "commercial graphite" you do not say what kind or grade is intended. The higher grade or crystalline graphite is used as a lubricant, in making crucibles, in the manufacture of pencils and for several other purposes. The lower grade or amorphous graphite is used chiefly in making foundry facings. As to preparation, it is necessary that the graphite should be freed completely from rock, sand, adhering gangue and all other impurities. Usually some form of concentration is used after crushing. There is a demand for good graphite, and a considerable quantity is imported.

Kaolin.—Can you tell me what the market price of good kaolin, or china clay, is in America? What price would American firms be prepared to pay for it f. o. b. Sydney, New South Wales? We have a large deposit and could supply 1,000 tons a month for an indefinite period.—L. M. M.

Answer.—Good china clay, or kaolin, sells in New York at the present time at $8 to $9 per ton of 2,000 lbs. A small quantity of very fine quality, used only for special work, is imported and sells as high as $17. The supply in the United States is good, and there are deposits known which can be opened up as demand increases. For Australian clay the freight charges would have to be deducted from the price given above. We do not think American firms would be willing to buy f. o. b. Sydney; and the mineral is hardly of sufficient value to carry the transportation charges. The only opportunity for a trade would be with the Pacific Coast; and the demand there is small.

The article on this subject in "The Mineral Industry," Volume VII., will give you an idea of the condition of the trade in the United States.

Sodium Sulphate.—1. About what is the present consumption of sulphate of soda in this country? 2. What is its commercial value, say at Chicago or Pittsburg? 3. Could the market absorb a considerable addition to the supply without materially affecting the market price?—E. E.

Answer.—1. Sodium sulphate is produced, or obtained, in two forms, one being the natural soda, large deposits of which are found in Wyoming, Nevada and California. The other form is known as salt-cake, which is the result of various chemical processes. By far the larger part of both the natural soda obtained and the salt-cake made is used in the manufacture of soda in other forms. Some of it, however, is used directly in glass making. It is difficult to obtain statistics of salt-cake, as so much of it is used in manufacturing and appears in the production returns under other forms. Of natural soda the quantity reported in 1898 in the United States was 7,150 tons.

2. The value of natural soda at the works last year was about $13 per ton.

3. The consumption of sodium sulphate is on the increase constantly, but how large an addition to the supply could be made without affecting prices is a difficult question for experts to answer.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects, issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Endirg May 1st, 1900.

648,380. SURVEYING INSTRUMENT. Jules A. Birsfield. The combination of the folding-sights and the degree-circle of a compass, one of

said sights having a vertically-bisecting sight-line, and also a pivoted mirror adapted to range in alignment with said sight-line.

648,389. PROCESS OF MAKING ACETONE. Harry O. Chute, Deseronto, Canada. The manufacture of ketones from metallic salts of organ acids, which consists in subjecting a progressively-moving thin film or layer of such salt to the action of heat sufficient for the formation of a ketone.

648,422. AIR COMPRESSING AND REFRIGERATING APPARATUS. John D. Moran, New York, N. Y., assignor of two-thirds to John A. Secor, same place, and William H. Gomes, Westfield, N. J. The combination of the following elements: A chamber for containing air under compression, a compressor for forcing air under compression into said chamber, means for forcing water into said chamber and to further compass the air therein, an engine for operating said compressor, a reservoir for holding air under compression, a conduit for conuucting air under compression from said chamber to said reservoir, a conduit for supplying air under compression to said reservoir to said engine to operate the same, and a motive power provided to operate conjointly with the said engine in operating the compressor.

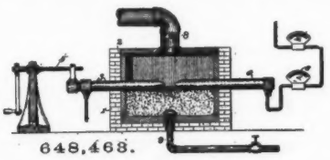
648,428. ALLOY. Joseph Patrick, Frankfort-on-the-Main, Germany. The process for obtaining an alloy of nickel, magnesium and zinc, which consists in adding to nickel and a salt of magnesium, a flux adapted to form a cohesive slag and a reducing agent for said magnesium salt, melting the mixture, and introducing zinc into the molten mass and maintaining said zinc underneath the slag until it is melted.

648,439. PROCESS OF PRODUCING ALLOYS OF IRON AND TITANIUM. Auguste J. Rossi, New York, N. Y., assignor of one-half to James MacNaughton, same place. The process consists in providing a bath of molten reducing metal the heat of the formation of whose oxide is at a given temperature greater than that of titanic acid; next supporting in said bath in the presence of molten iron titanic acid, and developing in the charge a temperature sufficiently high to insure the requisite reaction between said reducing metal and the oxygen of the titanic acid leaving the liquefied metallic titanium to become alloyed with the liquefied iron.

648,458. CONCENTRATOR. Cleophas Galvan, Zacatecas, Mexico. A concentrator having an ore-feed and a vibrating table carried on a frame.

648,462. COMPOUND FOR ARTIFICIAL FUEL. Isaac Kaufman, Baltimore, Md., assignor of two-fifths to Robert C. Dotson and Jacob M. Moses, same place. An artificial fuel composed of resin, tallow, sal-soda, alum, cider-vinegar, flour paste, coal-dust and sawdust.

648,463. PROCESS OF ABSTRACTING SILICON FROM SILICIOUS MATERIALS. Richard I. Knaur, Vienna, Austria-Hungary, Harold W. Buck, Schenectady, N. Y., and Charles B. Jacobs, East Orange, N. J. The process consists in subjecting silicious materials to the



648,463.

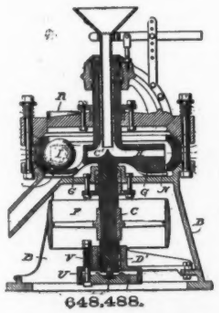
heat of an electric furnace to raise them to incandescence, and while so incandescent subjecting them to the action of a gas containing hydrogen and oxide of carbon.

648,488. PULVERIZING MACHINE. George S. Emerick, Philadelphia, Pa. A machine of the ball type, having heavy grinding balls carried between two grinding rings.

648,508. STEEL CASTING. Andres G. Lundin, Boston, Mass., assignor by mesne assignments to the United States Steel Company, same place. Steel castings containing an admixture of from 1 to 4 per cent. of copper, 18 per cent. to 0.3 per cent. of silicon, 0.1 per cent. to 0.4 per cent. of manganese, and 3 per cent. or less of aluminum.

648,509 and 648,510. PROCESS OF MAKING STEEL CASTINGS. Andres G. Lundin, Boston, Mass., assignor to the United States Steel Company, same place. The process consists in heating steel scrap in a furnace and melting the same to substantially a boiling point; inserting in the molten metal a small quantity of copper; allowing sufficient time for the copper to became thoroughly melted and mixed with the molten metal; inserting in the molten metal a small percentage of ferrosilicon; allowing sufficient time for the ferrosilicon to became melted and mixed with the molten metal; inserting in the molten metal substantially simultaneously small quantities of ferromanganese and aluminum; and pouring the molten mass of metal or alloy into a mould in the usual manner.

648,522. PULVERIZING MACHINE. Leroy S. Prouts, Canton, Ohio. The combination of a bed or base, a power-shaft provided with pinions, a smooth-faced crushing-roll mounted upon a shaft, and rotatably



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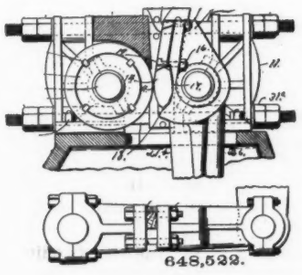

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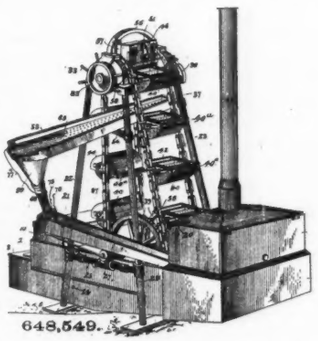
connected with the power-shaft, an oscillating jaw journalled at a point horizontal with the shaft of the crushing-roll, and provided with a convexed crushing-plate.

648,549. ORE SEPARATOR AND AMALGAMATOR. Godfrey H. Cline, Jersey Shore, Pa. The combination of a sluice-box, an open-bottomed earth-receiving chamber arranged at one end of the sluice-box and communicating directly therewith, a furnace arranged at the end of the sluice-box opposite the earth-receiving chamber and having a flue connection with the latter, a washing-screen located within the open earth-receiving chamber and exposed directly to the water within the sluice-box, an elevated sluiceway, and a conveyor arranged to work in the sluice-box, and so propelled as to impart impulses to the water in a direction toward the screen for washing the contents of the latter.

648,601. CENTRIFUGAL APPARATUS FOR CASTING. Frans G. Stridsberg, Stockholm, Sweden. A centrifugal apparatus comprising a tilting support, a rotary mold journalled in said support and having an extended operating-shaft, a wheel operatively connected with said shaft and arranged to tilt therewith and a plurality of



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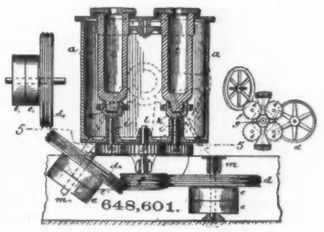

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independent driving-wheels arranged in different positions, said wheels on the tilting support being adapted to separately engage said driving-wheels to rotate the mold.

648,652. ALLOY. Louis Boudreaux, Paris, France. An alloy consisting essentially of copper, bismuth, cadmium and antimony.

648,658. MANUFACTURE OF GAS. Jesse A. Dubbs, Pittsburg, Pa. The method consists in charging fuel into a closed retort, raising said fuel to and maintaining it at an incandescent temperature by heat applied externally to the retort and then forcing mingled air and steam through the fuel, the air and steam heated to or above 700° Fahrenheit while mixed together.

648,660. X-RAY APPARATUS. Reginald A. Fessenden, Allegheny, Pa. As an improvement in an apparatus for the production of X-rays, an anticathodic plate having the surface exposed to the cathode-currents formed of osmium, substantially as set forth.

648,688. PROCESS OF MANUFACTURING GAS. John H. Green, St. Louis, Mo. The process consists in placing in a vessel a suitable quantity of calcium carbide and liquid hydrocarbons, and subsequently feeding a sufficient quantity of water at intervals to the mixture, whereby when the gas is generated by the water coming in contact with the calcium carbide, the same will pass through the liquid hydrocarbons, and simultaneously collect a sufficient quantity of gas from the same.

648,710. FUSE-BLOCK. George C. Queich, Vintondale, Pa. The combination with the base-block composed of insulating material provided with a longitudinally-extending ridge on its one face, of the contact-blocks embedded in said base-block, clamping-plates mounted on said contact-plates, and cam-plates pivotally mounted on said clamping-plates for depressing a portion of said clamping-plates and holding the fuse-wire between the said depressed portion and the contact-plates.

648,711. CENTRIFUGAL SEPARATOR FOR ORES. Harald De Raasloff, New York, N. Y. The combination of a shell, an inlet at one end and an outlet at the other end of such shell for solid matters, and said shell being formed with an increasing outward flare toward the said outlet, whereby the resultant of the centrifugal force parallel to said shell is progressively increased toward said outlet.

648,720. EXCAVATOR. George W. Barnhart, San Francisco, Cal., and George W. King, Marion, Ohio, assignors to the Marion Steam Shovel Company, Marion, Ohio. The combination with a boom, and a bucket arranged to operate below the boom and provided with an upwardly-extending stem, of a box affording lateral bearing for the stem, which box is supported from the boom and has a limited play up and down.

648,756. COMPOSITION OF MATTER FOR FURNACE-LININGS OR OTHER PURPOSES. Rudolf Keck, Denver, Colo. An artificial stone, consisting of a magnesium material, and a binder or flux consisting of the material of the shale constantly occurring in the Jura-Trias along the eastern foot-hills of the Rocky Mountains, said stone being porous and a bad conductor of heat.

648,764. APPARATUS FOR PRODUCING OZONE BY ELECTRICITY. Joshua H. Lamprey, London, England. An apparatus consisting of a plain conductor, a discharge-conductor, a series of discharge members strung thereon, a series of intervening dielectric members of greater diameter than the discharge members also strung on said conductor alternately with the discharge members, and a dielectric intervening between the plain conductor and the discharge members and having the dielectric members resting on its surface.

648,772. PROCESS OF MAKING HYDROSULPHIDES. Ansil Moffatt, Indianapolis, Ind. The process of producing, in solution, a hydrosulphide of an alkaline-earth metal, consisting in mixing two equivalents of the sulphide of an alkaline-earth metal with one equivalent of a magnesium salt.

648,809. PROCESS OF MAKING ANHYDROUS ZINC CHLORIDE. Oscar J. Steinhart, Julius L. F. Vogel and Henry E. Fry, London, England; said Steinhart and Vogel assignors to said Fry. The process consists in boiling a solution of zinc chloride in a vessel in which a partil vacuum is maintained.

648,831. FLUX FOR SOLDERING ALUMINUM. William S. Bates, Chicago, Ill., assignor of two-thirds to Walter C. Peacock and Oscar F. Engdall, same place. A flux for soldering aluminum containing two halogen salts, one of said salts being a fluoride.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy.

Week Ending April 7th, 1900.

7,984 of 1899. COKE OVEN. R. Brunck, Dortmund, Germany. In coke ovens, improved methods of collecting the distillatum gases.

9,116 of 1899. CONVEYOR. W. J. Jenkin, Northingham. Detailed improvements in the inventor's conveyor for ores, coal, etc.

9,432 of 1899. AMMONIA SULPHATE MAKING. H. W. Hemingway, London. Methed of utilizing waste sulphuretted hydrogen gases for the manufacture of sulphate of ammonia.

9,462 of 1899. MINERS' LAMPS. J. G. Patterson and C. Darrah, Manchester. Improved method of lighting miners' oil lamps by electric current.

9,806 of 1899. COPPER SULPHATE MAKING. H. Palas and F. Cotta, Marseilles, France. Production of copper sulphate by electrolyzing an alkaline sulphate with anodes of copper.

10,609 of 1899. COAL CUTTER. Lord Masham, Leeds. An improved form of carriage for coal cutters.

PERSONAL.

Dr. A. R. Ledoux of New York is inspecting a nickel deposit in Oregon.

Mr. Ryerson Ritchie has been elected president of the Cleveland, O., Chamber of Commerce.

Mr. T. A. Rickard, State Geologist of Colorado, paid a visit to Gilpin County mines last week.

Dr. W. B. Phillips, of Pittsburg, Pa., recently examined the San Carlos coalfields in Arizona.

Mr. E. D. Leavitt, consulting engineer of the Calumet & Hecla Mining Company, is on a visit to the mine.

Mr. Austin Brown, of Butte, Mont., has been appointed general manager of Capt. J. R. De La Mar's Pacific Coast mines.

Mr. Walter Renton Ingalls, consulting mining engineer and metallurgist, has taken an office at 153 Milk Street, Boston, Mass.

Mr. S. B. Harris, superintendent of the Quincy Mine, near Hancock, Mich., has returned from an extended trip through the South.

Mr. J. B. Hastings, consulting mining engineer of the War Eagle and Center Star Mines, has been visiting Vancouver and Victoria, B. C.

Mr. E. S. Moulton, of Boston, president of the Gilpin-Boston Gold Mining Company, is paying a visit to the property in Gilpin County, Colo.

Mr. Richard Sykes, of the Kansas-Burroughs Consolidated Mining Company of Gilpin County, Colo., after an absence of 7 months in London, Eng., has returned to Denver.

Mr. S. W. Osgood, Jr., late of the Michigan College of Mines, has accepted the position of mining engineer with the Huron Mining Company, of Crystal Falls, Mich.

Mr. E. McCormick, who has been with the Empire State-Idaho Company at Wardner, Idaho, has accepted the position of superintendent with the Vulcan Copper Mining and Smelting Company.

Mr. C. Wade Stickney has accepted the position of general superintendent of all the Arizona Eastern & Montana Company's properties in Yavapai County, Ariz., and has returned from New York to Prescott.

Mr. William S. Haskers, superintendent of the East Le Roi Mine, Rossland, B. C., has severed his connection with the British America Corporation. He returns to San Francisco, Cal., and will engage in mining on his own account.

Mr. F. C. Woodbury, who had charge of the assay office of the Calumet & Hecla Mining Company, at Calumet, Mich., has resigned to take charge of a Milwaukee concern, which has mining properties in Mexico, Colorado and on the Gogebic range.

Mr. Henry Seeley, as representative of an English syndicate, has acquired for $500,000 the South Side Mining Company's property at Galena, Kan., and also the Rubberneck Mine, situated at Neck City, for $300,000. Mr. Seeley is now in this country.

Prof. Leonard, recently from Iowa State University, has been selected to be president of the Montana School of Mines. Prof. Leonard for 27 years occupied the chair of Mathematics and Astronomy at Iowa University. He will fill a like position in Montana.

Mr. T. H. Oxnam has resigned the general management of the Bully Hill mines, of Shasta County, Cal., and will locate at Los Angeles, Cal., where he will open an office as mining expert. Mr. Oxnam was formerly with the London Mining and Financial Agency.

Dr. F. M. Simonds of Simonds & Wainwright, mining engineers and assayers, of New York, is on a several weeks' visit to Virginia, North Carolina and Colorado. On his return to New York, Dr. J. H. Wainwright, the other member of the firm, will leave for Paris on professional business.

Mr. H. C. Callahan, the late manager of the Lake View Consols Mine, Kalgoorlie, West Australia, is now in England, and it is said has issued a writ for libel against Col. Villiers, the chairman, for the statement made at the meeting that he kept the board entirely in the dark as to the necessity for reducing the mine's output from 30,000 oz. monthly to 12,000 oz.

Mr. Montague Chamberlain, for many years secretary of the Lawrence Scientific School at Harvard University, is to become manager of the New England Audit Company, of Boston. His resignation took effect on January 1st, 1900. The vacancy left by Mr. Chamberlain's resignation will be filled by Mr. James Lee Love, instructor in Mathematics at Harvard.

Gov. Sayers, of Texas, has appointed the following delegates to the International Mining Congress in Milwaukee, Wis., June 19th to 24th: D. W. Reckhart, El Paso; J. B. Dibrell, Seguin; Louis F. Dolch, Eagle Pass; E. M. Bacon, Austin; J. A. Stevens, Burnet; Juan S. Hart, El Paso; Emil Mosheim, Seguin; James L. Slayden, San Antonio; S. V. Pfeuffer, New Braunfels; W. W. Turney, El Paso; I. W. Carhart, Clarendon; W. L. Say, Llano; J. S. McNamara, Houston; W. E. Bell, El Paso; A. C. Schryver, San Antonio; James R. Johnson, Austin; E. S. Peters, John W. Maxey and Robert McGee, Calvert.

OBITUARY.

Isaac Crocker, secretary of the Mysore, Nundydroog, Balaghat and Coromandel companies, died April 21st at his residence, at Catford, Eng. For some years past Mr. Crocker had been in feeble health from a lung complaint, which terminated in his death at the early age of 40 years. Mr. Crocker's career was from the first closely associated with the firm of Messrs. John Taylor & Sons. At the age of 15 he served that house in connection with the Wheal Friendship Mine, in Devonshire, gaining a considerable practical experience of mining, and his association with the mining companies of which he was secretary at the time of his death dated from their inception.

Henry M. Curry, a partner in the Carnegie Steel Company, died May 5th at Atlantic City, whither he had gone but a few days before. He had been in poor health for several years, as a result of too close application to business. Mr. Curry was born in Wilkinsburg in 1847. He served through the Civil War, and after the war secured a clerkship with Bryan & Caughey, metal brokers, of Pittsburg. In 1868 he went work for the Lucy furnaces, then owned by Kloman & Carnegie Brothers, where he remained for several years, and then showed such aptitude that he became manager of the furnaces. He remained in charge of them until 1873, when he went into the employ of Carnegie Brothers & Company as superintendent of their furnace department, looking after the purchase of ores. Mr. Curry became a partner in the firm in 1884, and from that time was a member of the board of managers. He was treasurer of the firm 5 or 6 years ago, and was succeeded by Lawrence C. Phipps. He was a member of the board of managers of the H. C. Frick Coke Company, and was its treasurer until its consolidation with the Carnegie interests. Mr. Curry is survived by a widow and 7 children.

SOCIETIES AND TECHNICAL SCHOOLS.

Michigan College of Mines.—The 28 students who are making a trip to the iron mines with Prof. Sperr, after spending 2 weeks at the Pewabic Mine, at Iron Mountain, Mich., will visit the principal mines of the Marquette and Menominee ranges, as well as the docks at Escanaba, and the blast furnace at Gladstone. This is the largest class ever taken to the iron country. Mr. H. T. Mercer and Mr. C. W. Botsford assist Prof. Sperr.

American Chemical Society—New Yory Section.—At the regular meeting of the New York Section of the American Chemical Society on May 11th, the following papers were read: C. W. Volney, "New Extraction Apparatus." C. W. Volney, "Artificial Musk." P. A. Levene, "Modern Researches on the Chemistry of the Proteid Molecule." J. A. Mathews, "Cobalticyanides of Bismuth." Dr. Volney's artificial musk was exhibited and caused considerable discussion. It is said to be a compound belonging to the paraffine series, and therefore is a distinct departure from the idea that an artificial perfume must contain the "benzol ring." No analysis was given, nor particulars of the method of preparation, these being reserved for a future communication.

It is not yet known what the essential element of true musk is, or whether it is pre-existent, or is formed by a slow chemical change in the constituents of musk material. Baur has examined musk to determine whether nitrated bodies were present, but found none. Asked whether his musk is composed of a saturated or unsaturated paraffine compound, Dr. Volney said it is saturated.

Dr. J. A. Mathews described an investigation of the cobalti-cyanides of bismuth designed to develop a process for separating bismuth in analytical pig and refined lead. The conditions under which such an analysis are carried out were found, however, to prevent the complete precipitation of bismuth as cobalti-cyanide.

Dr. McMurtrie, president of the society, said that in view of the approaching general meeting it was necessary that each member should bring out whatever subject he had in readiness for publication in time to have its title announced on the programme. All such titles should be transmitted to the general secretary, A. C. Hale, 551 Putnam Avenue, Brooklyn, N. Y.

INDUSTRIAL NOTES.

The Lukens Iron and Steel Company, of Coatesville, Pa., has its new 3-high universal plate mill in successful operation.

The Bethlehem Steel Company, of South Bethlehem, Pa., manufacturer of nickel steel forgings, has opened a branch office in Denver, Colo. C. S. Burt, formerly of New Orleans, will have charge of the Denver office.

The Cincinnati shops of the International Pump Company, it is stated, will build the pumps to be used on the pipe line for the Koolgardie water system. There will be 9 pumping stations, and the total horse power required will be 2,881.

The M. C. Bullock Manufacturing Company, of Chicago, is shipping a large mine ventilator to West Virginia, and has shipped a large diamond drill and outfit to old Mexico, another to Wisconsin and one to Colorado, and has shipped a hoisting plant to Minnesota.

The Edw. P. Allis Company, of Milwaukee, Wis., states that it conducts well-appointed mining machinery departments in connection with its New York and Chicago offices. The New York office is 95 Liberty Street, and the Chicago office in the Home Insurance Building.

The Chicago Pneumatic Tool Company and Joseph Boyer, of St. Louis, manufacturers of pneumatic tools, have entered suit in the United States Court against the Philadelphia Pneumatic Tool Company and the Keller Tool Company, charging infringment of the Boyer pneumatic tool patents.

Fearon, Daniel & Company, of New York City, have recently made a shipment of structural bridge work to the Imperial Railways of North China. The Carnegie Steel Company supplied the material. A large turntable from the Pencoyd Iron Works of Philadelphia went forward at the same time.

The business in pumps, boilers, mining, milling and concentrating machinery heretofore carried on at Los Angeles, Cal., under the name of C. B. Boothe & Company, has been transferred to the Boothe Manufacturing and Supply Company. The new incorporation has $100,000 capital, and C. B. Boothe is president and manager.

The Hilles & Jones Company, of Wilmington, Del, makers of machine tools, is working on punches for the Chinese Eastern Railway, and punches and shears for the Sanyo Railway, of Japan. The latter shipment will comprise 7 car loads. A large order from the Eastern Ship Building Company, of New London, Conn., is being gotten out.

The National Asphalt Company, recently incorporated with $15,000,000, has elected officers and directors as follows: President, Wendell P. Rice; vice-president, George B. Hanford; treasurer, Percy H. Brundage; secretary, James Murray Mitchell. Directors, Wendell P. Rice, Geo. B. Hanford, Percy H. Brundage, James Murray Mitchell and Ansel L. White.

The J. H. Parsons Chemical Company of Chicago recently analyzed a sample of boiler feed water that had been sent for analysis all the way from India. The analysis showed a remarkable percentage of solids in the water, which contained 26.361 grains of total solids per United States gallon. The greater part of this was sodium chloride (common salt).

The Heine Safety Boiler Company, of St. Louis and New York City, has secured a contract for the supply of a 500-H. P. water-tube boiler plant, to be installed in the power station of the Yokohama United Electric Light station. The Ponce Electric Light Company, of Ponce, Porto Rico, has ordered some boilers through the St. Louis office of the Heine Company.

C. A. Daigh, who has established himself in Chicago as a consulting engineer, is engaged in rebuilding the Loretto Iron Company's plant at Loretto, Mich., and has just completed specifications for a 1,000-H. P. compound condensing blowing engine for the Montana Ore Purchasing Company, of Butte, Mont.; also a gold dredge for the Northwestern Development Company.

The New York Air Compressor Company has received through the Chicago Pneumatic Tool Company an order for a compound steam-driven compressor to furnish 1,500 cu. ft. of air per minute for the motive power department of the New York Central & Hudson River Railroad. The company is also building a large compressor to be placed in the Grand Central Station, New York City, for operating pneumatic signals.

The Birmingham Machine and Foundry Company, of Birmingham, Ala., has entered suit against the Alabama Steel and Wire Company for $20,595 on account of material furnished and work alleged to have been done. The complainants manufactured 2 engines, fly wheels, etc., for the defendants at Ensley, but were some months behind in making delivery on the work as per contract, because of a big fire at their plant.

Stein & Boericke, metallurgical engineers, with works at Primos, Pa., report a brisk business and numerous orders on hand. These orders include: McCreary Coke Company, Limited,

Graceton, Pa., 1 150-ton coal washing plant and 1 pyrites washery; Nova Scotia Steel Company, Limited, Ferrona, N. S., 1 400-ton coal washing plant and 1 battery for 25 retort coke ovens; Jamison Coal Company, Greensburg, Pa., 1 1,500-ton coal washing plant; Dominion Iron and Steel Company, Limited, Sydney, Cape Breton, 1 600-ton coal washing plant.

The Pittsburg Reduction Company, of Pittsburg, Pa., which controls the manufacture of aluminum in this country, has removed its Eastern sales office from the Havemeyer Building, New York City, to the Phelps-Dodge Building, corner of Cliff and John streets. The company will in the future handle all local New York business, and will carry in that city a small stock of standard sizes of aluminum ingots, sheets and wires. The Eastern sales agent, S. K. Colby, with headquarters in the Phelps-Dodge Building, will have charge of local New York business in addition to the general Eastern trade.

The Pressed Steel Car Company of Pittsburg, Pa., forwarded its exhibit for the Paris Exposition. The shipment consisted of 5 steel cars, having a carrying capacity ranging from 40,000 lbs. to 110,000 lbs., and weighing from 21,900 lbs. to 38,200 lbs. each. Models of the different types of pressed steel cars which the company constructs and samples of side stakes, center plates, body and truck bolsters were also sent. The company will in May ship to France the 100 cars of 66,000 lbs. capacity which the engineers of the Paris, Lyons & Mediterranean Railroad ordered while on a recent visit to the United States.

TRADE CATALOGUES.

The Koenig assay furnace, which is stated to employ a new method for the scorification and cupellation of gold and silver assays without muffle, is described in a pamphlet issued by the manufacturer, Augustus Koenig, of Philadelphia, Pa. The pamphlet is a reprint of a paper present at the Atlantic City meeting of the American Institute of Mining Engineers.

The Borden & Selleck Company, of Chicago, Ill., which manufactures the Harrison conveyor and deals in conveying machinery, issues a neatly bound 136-page catalogue containing illustrations of plants at which Harrison conveyors have been installed. The catalogue gives details of this conveyor and its attachments for handling coal, etc. Other articles illustrated are coal crushers, buckets, screens, etc., and there are price lists of pulleys, gears, shafting, sprocket wheels and sheaves.

John Davis & Son, of Derby, Eng., long known as makers of surveyors' and engineers' instruments of precision, have opened a branch house in Baltimore, Md. The company issues a 28-page illustrated catalogue, which calls attention particularly to the merits of the improved Hedley dial for colliery use. This is fitted with an outside vernier, and with the Hoffman joint for quick setting up. The catalogue also contains price lists of theodolites, levels, compasses, aneroid barometers, anemometers and several varieties of safety lamps.

By way of calling constant attention to his business, Arthur Koppel, of New York, has issued a series of blotters ornamented on one side with views of industrial railroads furnished by his German house to mines, quarries, plantations, lumbermen and others in various parts of the world. These views are excellent illustrations of the work done by the firm, and there is only one objection to them, which is that they are too good for the ordinary uses of a desk blotter, and one is sorry to throw them away. They are an excellent reminder of the many applications which the industrial light railroad now finds.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods of any kind, and shall be pleased to furnish them information, catalogues, etc.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

Petroleum Production and Shipments.—The pipe line report for April shows an increase of 397,263 bbls. in net stocks. The runs of Pennsylvania oils averaged 96,033 bbls. a day, a gain of 1,011 bbls. over March; the shipments averaged 94,817 bbls., a gain of 4,570 bbls. over March. The average daily runs by the principal pipe lines in the Lima field were 49,481 bbls., an increase of 2,500 bbls. over March; the shipments were 44,416 bbls. daily, the lowest this year. The stocks of Lima oil have increased each month this year, and at the close of April amount to 11,127,633 bbls. The total average daily runs in April were 145,514 bbls., and shipments 138,392 bbls.

Oil Exports.—In April the United States shipped 7,878,898 gals. crude oil, 1,518,616 gals. naphthas, 51,584,633 gals. illuminating, 6,390,749 gals. lubricating and paraffin, and 973,308 gals. residuum; total, 68,346,204 gals., as against 66,873,657 gals. in April, 1899. The exports for the four months of 1900 aggregated 283,053,399 gals., against 266,292,416 gals. last year.

ARIZONA.

Graham County.

Arizona Copper Company, Limited.—This company, at Clifton, reports that the production for the month of April was 931 short tons of copper.

CALIFORNIA.

Calaveras County.

(From Our Special Correspondent.).

Boire.—At this hydraulic mine, near Railroad Flat, comprising 60 acres, the water has been turned on from Clark's Ditch, and 4 men are at work piping off. The restraining dam is constructed.

Nevada County.

(From Our Special Correspondent.).

Home.—A 20-stamp mill is contemplated at this mine, on Deer Creek, also an air compressor and other improvements. Dan McFall is superintendent.

San Bernardino County.

(From Our Special Correspondent.).

Gold Mountain.—A 40-stamp mill is in course of erection at this mine, 40 miles east from Victor, and 5 miles northeast from Bear Valley Lake. For several years nothing has been done in the way of development, although previously a number of open cuts have been made. The property is now owned by Capt. De La Mar.

Shasta County.

(From Our Special Correspondent.)

Twenty-five miles northeast from Redding a tract of coal land is being prospected comprising 557 acres of patented land. A 200-ft. tunnel shows shale and coal. The coal is semi-bituminous, and is said to be a good steam coal and suitable for domestic purposes. Arrangements are being made to organize a company.

Dry Creek Slide.—It is reported that San Francisco parties have bonded this property for about $50,000 to prospect it, and if results prove satisfactory, Eastern capital has been promised to develop it on a large scale.

Siskiyou County.

(From Our Special Correspondent.)

At the pocket claim, on Ash Creek, a regular ledge 10 ft. wide is said to have been discovered by the owner, J. W. Downing. Men are taking out ore, which is hauled to the mill. The bond held by Eastern parties ran out May 1st.

Dewey.—Eighty men are busy on the wagon road being built from this mine to Gazelle, and as soon as completed ore will be hauled to the railroad for shipment to the smelters. It is claimed that the high grade ore has been developed for 100 ft.

Trinity County.

(From Our Special Correspondent.)

Texas Jack.—This claim, on the South Fork of Indian Creek, about 2 miles southwest from the Bully Choop Mines, has had considerable development work done on it, and a fine body of ore has been opened. The ledge is 18 in. wide. The 3-stamp mill on the Caucasian claim has been moved to this property, and will be running by June 1st.

Tuolumne County.

(From Our Special Correspondent.)

Big Oak Flat District.—At the Longfellow the drifts on the 400-ft. are being extended, and sinking continues in the main shaft. The Rhode Island is sinking below the 140-ft. The Mississippi shaft is down 200 ft., and a drift has been run on the 60-ft. Good ore is being taken from the east drift on the 400-ft. of the Mack Mine.

Golden Thread.—Work has begun on this claim, 4 miles north from Groveland, by W. F. Craft, who holds a bond. The old workings have been cleaned out and a crosscut started.

Gold Ready.—This property has been bonded to L. A. Barrone, who has begun work. The old workings consist of 2 tunnels in respectively 55 and 150 ft., and a shaft down 200 ft. The vein at the bottom shows 4½ ft. of good ore. The claim is 3 miles south of the Buchanan Mine and 15 miles southeast from Sonora.

Little Beauty.—The last lot of 70 tons of ore from this mine, at Arrastraville, milled at the Rising Sun Mine, yielded about $40 per ton. The vein is 2 ft. wide, carrying high grade sulphurets. The property is worked under bond.

Mount Jefferson.—A full force of men is employed at this mine, near Groveland, and the mill is running day and night on rich ore.

Ventura County.

(From Our Special Correspondent.)

Frazer.—A great deal of work has been done at this mine, 6 miles west from Gorman. The ore bodies developed by tunnels are large, and are said to average $10 per ton. The 10-stamp mill is run by water power. There is a cyanide plant on the ground. The sulphurets are high grade.

COLORADO.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—E. C. Roberts to Robert A. and G. Duncan, the General Garfield and General Hancock lodes, $3,000; T. M. Miller to A. Rapin, 1-20 interest Oom Paul lode; H. J. Sears to R. M. Rounds, et al., the Thomas & Company placer, with water rights, buildings, etc., the One Fifty lode, situated in Enterprise District; C. K. Colvin to the Boston & Denver Mining and Milling Company, surface ground in Gregory District; Pactolus Hydraulic Mining and Milling Company to Thomas B. Ludlum, a lease on the Yosemite placer covering 1,120 acres on South Boulder Creek; C. Parkinson to C. E. Smith, one-third interest in Bert, Frances H. and Eureka Extension lode claims, consideration $1,000; J. E. Lightbourn, et al., to Fred Stephens, the Grand Union lode.

Bertha Mining and Milling Company.—The company will put up shaft building on the Colfax claim; also 15-H. P. gasoline hoist. W. M. Tanner, Central City, is manager.

Elk Park Mining and Milling Company.—H. P. Steele has been appointed receiver by Judge Butler, of Denver. The company has some outstanding indebtedness. Pennsylvania parties are interested.

Gunnell Gold Mining and Milling Company.—The clean-up for April resulted in retorts of 36 lbs., valued at about $9,000. A large quantity of water is handled, suspending sinking of main shaft, and 100 men are at work. F. C. Young, Central City, is manager.

Kansas-Burroughs Consolidated Mining Company.—During April the ore shipments were but 3,400 tons, on account of heavy snows delaying shipments. P. McConn, Central City, is manager.

O'Neill.—Sinking is going on by the Ontario-Colorado Gold Mining Company, and shaft is down 380 ft. A big 14 by 16 gear hoist has been ordered from the Denver Engineering Works, and the shaft will be put down several hundred feet deeper. A new ore house, 36 by 40, is being built, and a heavy production will start. H. C. Eastman, Central City, is manager.

Powers.—A 25 H. P. hoist plant is being installed, and the lessees are going to work through the deep shaft. Fred Mack, Central City, is looking after the property.

Side Issue.—This property has been bonded in the sum of $40,000 to E. Steffan, of Apex.

Lake County—Leadville.

(From Our Special Correspondent.)

Leadville Output.—Bad roads still interfere with shipments, but nearly all properties are hoisting heavily and hauling about 2,300 tons per day.

Blind Tom.—Lessees, headed by J. W. Newell, have a 5 years' lease on this property and are retimbering above the 400 ft. level. The shaft is 425 ft. deep and drifts have opened up good iron bodies from which shipments will be made while development and prospecting goes on. The property has been idle for 12 years.

Bull's-Eye.—This is one of the claims of the Iron Silver combination operated by lessees headed by W. F. Page, who just opened a fine body of $60 ore at 160 ft. in a drift run 178 ft.

California Gulch Mining Company.—Mr. Chas. Bohn has resigned as secretary and is succeeded by Mr. R. R. Moore.

East Side Mining Company.—It is reliably stated that this company is now backed by Gen. Irving Hale, and that a number of Ohio men are interested. It is the intention to secure mineral rights to lots in the heart of the city, to sink 2 shafts and prospect for shoots. It is understood that the company is paying $400 a lot.

Elk.—The Elk and Donovan claims on Breece Hill are worked by Thos. Ovens & Company. An entirely new shoot is opened of very fine ore, and shipments will average 25 tons a day from now on.

Great Hope.—The new shafthouse and other surface improvements are completed, and machinery will soon be in place. The new lessees will sink the 140-ft. shaft to a depth of 500 ft.

Ibex Mining Company.—Over 500 men are employed, many of them on prospecting and development. Fifteen air drills are on dead work. It is quite likely that No. 4 shaft will be sunk deeper before long. Shipments average 275 tons per day.

Iron Silver Mining Company.—Manager Swartz

is shipping 150 tons per day of crude lead and iron sulphides through the Moyer shaft. The Moyer concentrating mill will resume work this week.

Mab Mining Company.—Much development work is being done and the bodies continue to open up better. Shipments have been curtailed owing to bad roads. The old board of directors has been re-elected as follows: Messrs. Sam. D. Nicholson, Patrick Crowe, R. J. Donnen, Julius Rodman and Wm. Brown. The directors will re-elect the old officers.

Silver Moon Mining Company.—This is a new incorporation capitalized at $1,000,000 to operate on Sugar Loaf section. The officers are: A. S. Harvey, president; J. H. Cole, vice-president; George W. Casey, secretary-treasurer; A. H. Boyd, managing director. The company has a lease and bond on the Silver Moon and Caribou claims and will sink to catch the Black Iron ore shoot.

Starr Placer.—There have been several deals on foot for this ground, which adjoins the Home and is in the hands of administrators for the heirs of the late Thomas Starr. The price asked is understood to be $160,000. W. S. Stratton, of Cripple Creek, made an offer this week of $135,000 which was refused.

Union Smelter.—This big plant of the American Smelting and Refining Company will close down this week to begin important improvements. The work will be under the direction of Supt. Morse.

Montrose County.

Mr. Poullot, of Poullot & Vailleque, of Denver, is developing 6 uranium claims about 6 miles up La Sal Creek, above Cashin. A plant of machinery is on the way from Europe and a small mill is to be erected near the claims.

Ouray County.

During April 140 cars of ore were shipped from Ouray. A decrease of 20 cars from 1899, the falling off being due to bad roads. The May shipments are expected to exceed 200 cars.

Silver Wave.—Good ore has been cut in this claim 3 miles below Ouray.

San Miguel County.

San Juan Gold Mining Company.—This is a Milwaukee, Wis., company that is opening the Bessie group near Telluride. The mill built in 1898 was not a success, it has now been entirely remodelled and is in operation. The full capacity is 200 tons in 24 hours. The first clean up gave a brick weighing over 700 oz. from 600 tons of ore, worth, perhaps, $5,000, the ore carrying some silver. A cyanide plant will treat the tailings. Mr. Buckley is manager.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

Badger Boy.—The Greater Gold Belt Company has sold its Badger Boy claim on Globe Hill, adjoining the Gold Crater Company, to C. W. Kurie. The price given is $100,000. The general opinion is that the purchase was made for W. S. Stratton. A large amount of property has been bought recently in this vicinity, the Touraine Company's property, the Monarch, the Cary M., Stanley and others. Mr. Stratton has owned for some time the Gold Crater and the Plymouth Rock. Taking all this property together, it would make a fine group, and it is very reasonable to suppose that Mr. Stratton has been buying. Most of it has been sold to Mr. Kurie, who, it is thought, is only an agent.

Bonnie Nell Gold Mining Company.—The Bonnie Nell claim shaft is 200 ft. deep and crosscutting is in progress. The property has been equipped with a new hoist and boiler. The hoist is a double-friction one, made by the Hendrie & Bolthoff Manufacturing Company of Denver, with cylinders 9 by 10 in. Besides this work by the company there is a lease on the north end of the property and one on the Kuster claim. The property is on Raven Hill, between the Moose and the Elkton.

El Paso Gold Mining Company.—Preparations are being made to install new machinery, including a compressor. Two new boilers are already in. Sinking below the tunnel level has recently begun. The property is on the western slope of Beacon Hill. Mr. Bainbridge, formerly in charge of the Elkton, is superintendent.

Favorite Gold Mining Company.—This company, it is reported, has bought the Gold Bug and Olive Branch claims, just east of the Victor, near the Y on the Midland Terminal Railroad. The price given is $17,000. The company is also understood to have bought the Nugget claim, a fraction on Battle Mountain, the price for which was stated as $8,500. The company recently sold its Favorite claim on Bull Hill to W. S. Stratton for $90,000, out of which it paid a dividend and bought these new claims, and still has some money in the treasury.

Grace Gold Mining Company.—This company, on Raven Hill, is employing a number of men cross-cutting. The shaft is about 300 ft. deep. The property is near the Minnehaha claim of the Monarch Company. No ore has been shipped.

Jack Pot Mining Company.—At the annual meeting the following directors were elected: Warren Woods, H. E. Woods, F. M. Woods, L. R. Ehrich and J. M. Allen. Warren Woods was chosen president, L. R. Ehrich vice-president, H. E. Woods treasurer, F. M. Woods secretary and assistant treasurer, and J. M. Allen assistant secretary. The reports of the officers showed the property to be in very good shape. The money in the treasury was $57,051, $25,000 more than a year ago. This property is on Raven Hill and is one of those controlled by the Woods Investment Company of Victor. The great bulk of the ore shipped was taken out under lease by Creston, Ia. people. The company has had considerable trouble with the Doctor on account of apex rights. The company paid in dividends during 1899 $137,000 from royalties received from the Creston lease.

Moose Gold Mining Company.—Some work is being done on this old-time producer on Raven Hill, chiefly sinking, toward the 1,000-ft. point. There is some trouble with bad air. There is good reason to think that ore may again be found in shipping quantities. The mine has paid $186,000 in dividends.

Work Mining and Milling Company.—A pump is being put in the big 650-ft. shaft of the Morning Glory Company on this property. This lease is being operated by one of the companies controlled by the Woods Investment Company of Victor.

FLORIDA.

(From Our Special Correspondent.)

The phosphate miners are curtailing operations; though nearly eighty mines were working at the beginning of the year in the hard rock region, only about 50 are running to-day. The miners prefer closing to selling rock at low prices, as labor has advanced 25%, lumber nearly 50% and machinery correspondingly. The Hazard 5 mines are still idle, but with fair prospects of resuming at an early date. There are no new plants being erected other than those previously reported. The Dunnellon Company is removing 2 of its plants—No. 7 across the Withlacoochee River from its present site, and the other to Hernando. The Cummer Lumber Company, of Jacksonville, expects to have its new plant near Newberry completed in about 20 days, and contemplates erecting 2 other plants.

In the pebble districts mining is progressing nicely, although shipments so far this year have been exceedingly light.

Stocks on hand at present are rather large, but nearly all are contracted for ahead.

GEORGIA.

Lumpkin County.

Dahlonega Consolidated Gold Mining Company.—At the annual meeting in Toledo, O., recently the following directors were chosen: J. W. Adams, Geo. H. Breymann, H. D. Ingersoll, Frank G. Thomson, F. R. Adams, R. C. Thomson, M. Hopkins, J. G. Rosenthal, L. Siebert, Wm. M. Fisher. The board of directors met and organized with J. W. Adams, president; Geo. H. Breymann, vice-president; R. C. Thomson, secretary and treasurer, and H. D. Ingersoll, general manager.

White County.

Longstreet.—This gold mine, formerly operated by C. F. Sheldon, is now worked by W. A. Danforth, owner of the property. A vein 12 ft. wide has been opened, which carries some pyrites.

IDAHO.

Blaine County.

Hope.—L. S. McClure has taken hold of this group of claims in the gold belt. near Hailey and installed J. H. Campbell as superintendent. The machinery has been overhauled and the shaft is being pumped dry. A 5-drill compressor is to be installed, and development and exploration work pushed.

Idaho County.

Big Buffalo.—This claim, with the Oro Fino and Merrimac in Robbins Mining District, Buffalo Hump, have been transferred to Charles Sweeny of Spokane for a cash consideration stated to be $125,000. The deal was put through by Van B. De Lashmutt of Spokane. The properties are practically undeveloped.

Owyhee County.

Cumberland.—The new mill at this mine, near Silver City, owned by the Virtue Consolidated Mining Company, of Montreal, is running smoothly. It is connected with the mine by a short tramway. With the completion of the hoist the ore will be drawn from the ore bin in the gallows frame and transported in cars to the crushing floor, where it dumps over the grizzly and into a big Comet crusher. A battery of 10 100-lb. stamps is located just below the ore bins, the ore passing through automatic feeders to the stamps. From the battery the pulp passes over silver plates to a Brown sizer, which divides it into 4 grades, and thence to 4 6-ft. Frue vanners on the bench below, each especially adjusted for treating the pulp as separated in the sizer. On succeeding floors below are settling tanks and pans, clean-up pan, etc. The retort room and laboratory will be in a building apart from the mill and on the same level as the clean-up floor. Three 100-H. P. Woods tube boilers will furnish the steam. The mill engine is a Fraser & Chalmers compound Corliss. The engine room will contain a Riedler compound 2-stage compressor, capable of running 12 drills. The hoisting engine is direct acting, with Corliss valve motion, steam brakes, steam reversing gear and steam clutches. It has a capacity of lifting 5 tons from a depth of 1,500 ft. at a speed of 2,000 ft. per minute. A small engine and dynamo for illuminating purposes will also be put in. The plant includes several pumps of great capacity, for use in the mine and for providing the mill with water.

Shoshone County.

Golden Chest.—The mill continues in operation. Acocrding to statements made in New York the first clean-up April 1st gave a brick weighing 99 oz.; another brick was cast April 15th weighing 141 oz., and another on April 30th weighing 163 oz. Sales of concentrates and shipping ores, it is said, have netted $947.

Headlight Mining Company.—This company has filed articles of incorporation. Thomas Roberts, Archie McCallum, William Roberts, Oscar Nordquist, Alexander Murphy, J. E. Markwell and J. Fred Markwell are directors, and Wallace is its principal place of business. The capital stock consists of 1,500,000 shares with a par value of $1 each. The company is organized to work a group of claims joining the Mammoth on the west, covering the summit of the mountain, separating the waters of Canyon Creek and Nine Mile.

Park Copper and Gold Mining Company.—This company is reported to have a 30-ft. vein of copper ore on its Stevens Peak claim. Patrick Burke, of Wallace, is manager of the company.

MICHIGAN.

Copper—Houghton County.

(From Our Special Correspondent.)

The copper mines are having labor troubles for the first time this year. The mines of the Bigelow syndicate are feeling them the most. The trammers at the Kearsarge struck for an increase, and returned to work, as the management promised to settle with them satisfactorily. The miners at the Quincy have struck for an increase of 15%. Capt. Harris offered them a raise of 10%, which was refused, and about 850 men quit work. The men are now averaging $57 a month, which is more than is paid by any other mine in the district, except the Calumet & Hecla and the Tamarack. At the Osceola the trammers struck for $60 per month. They have been getting $55. The management refused to grant the increase, and the men went to the dry and prevented the night shift from going down, so that not much is being done. All is quiet, and no disturbance has been made by the strikers.

The strikers at the Kearsarge were granted $2 per month advance by Superintendent Parnall on May 11th, and resumed work. Miners now get $60 and trammers $54 per month.

Arcadian Copper Company.—Men are getting the old shaft on the Mesnard epidote in shape. Col. William Coach has purchased 1,000,000 ft. of sawed lumber and timber from this company.

Baltic Mining Company.—The contract for the substructure of the new mill has been let to Pendergast & Clarkson, of Chicago. The building is to be 175 ft. by 190 ft., and as planned will contain 4 heads, only 2 of which will be put in at first. The Wisconsin Bridge and Iron Company, of Milwaukee, will build the superstructure. The foundations will rest on solid rock, which is reached in some places at a depth of 28 ft.

Centennial.—It is reported that a new shaft will be started within a few weeks.

Franklin.—The Albany & Boston lode will be opened. About 100 ft. from where the lode was struck is an old shaft down 1,300 ft., which will be enlarged to a 3-compartment shaft, measuring 6½ by 19 ft. inside the timbers. Only 300 ft. of water is in the shaft, and this will be pumped out.

Isle Royale Consolidated.—The Wisconsin Bridge and Iron Company is building a 180-ft. viaduct over the Duluth, South Shore & Atlantic tracks for the Isle Royale Railroad.

Wyandotte Copper Company.—At the annual meeting in Boston the old directors were re-elected. Superintendent Collins stated that Shaft No. 1 is now down 261 ft., from which it is proposed to cross-cut. A second shaft opened about ¼ mile north of No. 1 and known as No. 9, is down 60 ft. Drill holes at several points on the lode have shown lode to be broken, but last drill hole shows some good looking rock. Financial statement on April 30 shows: Cash received, $300,000; interest and discount, $8,753; paid drafts R. G. Rollins agent, $113,771; paid expenses, $15,920; balance on hand, $179,061.

Copper—Keweenaw County.

(From Our Special Correspondent.)

Mohawk Mining Company.—About 100 men are working on a railroad to connect the mine with

its stamp site on Big Traverse Bay. The grade will be 6 miles long.

Iron—Marquette Range.

It is stated that J. T. Pascoe, who has been exploring on the North Range, less than 2 miles north of the American Mine, has uncovered a considerable body of ore that averages 64% iron and 0.021 phosphorus. The surface covering is light.

MINNESOTA.

(From Our Special Correspondent.)

Iron ore shipments are now at the rate of about 40,000 tons daily from the head of the lake, about half of which comes over the lines of the Duluth & Iron Range. Lake freights have weakened till wild tonnage is held at about 15c. under contract from Duluth and neighboring ports.

Wellington R. Burt, of Saginaw, Mich., owner of ore lands on the western part of the Mesabi range has brought suit against the Lake Superior Consolidated Iron Mines, the John D. Rockefeller interest. Mr. Burt has given the company notice of a cancellation of leases held by it on some 1,000 acres of his lands, and asks the courts to confirm the cancellation. He alleges that the company has not carried out the terms of its leases in that it has not mined as much ore as could be mined and shipped at a profit, though it has mined and paid for the full minimum output agreed upon. He has for a long time been restive under the methods of the Consolidated and has threatened suit before. His actions will be watched by a number of others. The Consolidated company holds many deposits of ore lands undeveloped, paying royalties thereon at a minimum, contracted when minimums were smaller than now.

Iron—Cook County.

(From Our Special Correspondent.)

The North American Iron Company has bought the outside interests in the Paulson property in T 65, R 5, and has sent a large crew to reopen the property, which has been idle. It was explored by Mr. Paulson with money said to belong to the stockholders of a Minneapolis bank. What ore is mined much be taken out via Canada to Port Arthur. A railroad built to the mine some years ago is now in a ruinous condition, but the new Canadian Northern Company will be able to improve it when needed.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Explorations.—On the Merritt property, the n w of 10, T. 58, R. 18, nothing is being done by the sub-lessee. There is a prospect for a large amount of ore, but the deepest hole in ore is down 25 ft. Ore has been found by exporations in lot 3, section 30, T. 58, R. 17, where a drill is working. Drills are at work in the w ½ of the n e of 28, T. 58, R. 20, adjoining the Clark, where John R. Mitchel owns some land. Explorations have begun on section 12, T. 57, R. 21. In section 18, T. 58, R. 20, hard ore has been struck on land owned by R. H. Palmer and others, which looks like a very large find. Explorations in 29, T. 59, R. 14, are showing ore. Messrs. Fay and Pearce have leased 26 40-acre tracts near the Fay, and have begun work. They have also put a drill at work on section 3, T 58, R 17, where there are indications of ore; In section 3, T 58 R 21, they have a drill on land belonging to J. R. Mitchell, of Winona. Whitesides and others have a drill at work in 58 19, close to land of the Mesabi Central Company, with good indications. C. E. Peaslee has secured a lease from the Wheeler-Marble Iron Company to lands in section 17, T 58, R 18, either to buy at $60,000 or to lease at a 25c. royalty. Work begins soon. H. E. Smith has taken a lease to lands in section 23, T 58, R 19, and will work there soon. The Cleveland Iron Company is exploring section 17, T 58, R 17, adjoining the Roucheleau and south of the Shaw. Explorations have ceased in section 25, same township, where Adams and others have shown a body of ore.

Commodore.—This Virginia Mine now employs about 300 men and is hoping to raise 350,000 tons from now to December 1st. The company is completing a 3-compartment shaft south of No. 3, and will soon abandon No. 1 and No. 2. About 150,000 tons are on surface. The mine produces a fine ore in its Admiral grade.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The market for zinc ore is still unsettled and prices were again cut from 50c. to $1 per ton on all grades, the top being $30.50 per ton for 62% ore. Lead opened the week at $26.50 per 1,000 lbs., but dropped to $23 before the close.

During the corresponding week last year, top grade zinc ore sold for $51 per ton and lead at $26 per 1,000 lbs., the sales were less than last week by 985,090 lbs. of zinc, and 466,750 lbs. of lead, but the value was greater by $59,536. For the first 19 weeks last year the zinc sales were greater than this year 8,189,230 lbs., the lead sales less by 2,598,220 lbs., and the total value greater by $753,282. As compared with the previous week, the lead sales were less by 128,930 lbs., the zinc sales greater by 2,368,010 lbs., and the value greater by $22,768. Following is the output of the Joplin District by camps for the week ending May 12th:

	Zinc, lbs.	Lead, lbs.	Value.
Joplin	2,879,070	559,070	$56,504
Galena-E mpire	2,099,230	230,640	34,860
Carterville	2,314,290	305,140	40,728
Webb City	529,980	51,180	8,632
Belleville	305,390	8,950	4,780
Duenweg	153,690	70,680	3,342
Stotts City	370,600	.....	5,559
Oronogo	520,700	1,870	7,651
South Jackson	96,350	6,380	1,452
Cave Springs	94,530	.....	1,276
Neck City	466,140	.....	7,225
Aurora	1,280,000	34,100	13,243
Granby	363,000	18,000	4,800
Carthage	264,660	.....	4,499
Central City	136,660	.....	1,845
Dade County	59,000	.....	443
District total	11,932,690	1,285,910	$196,800
Total 19 weeks	184,943,760	21,792,490	$3,383,318

Mining Land Sales.—The well-known Reding Mine, 40 acre fee, and new mill now being erected on Shoal Creek, Newton County, has been sold by Morgan Jones and C. H. Sillman, of Fort Worth, Texas, for $100,000, to the Joplin-Cripple Creek Mining Company. The mine was opened last October and since then has made on an average 40 tons of ore per week. It was sold early this year to Jones & Sillman for $50,000, who have made big dividends since.

MONTANA.

Cascade County.

Broadwater.—L. S. McLure, of San Diego, Cal., brother of C. D. McLure, of St. Louis, who has had charge of the building of the Diamond R. concentrator, has bought this mine at Neihart from John E. Searles, of New York. The price paid is not given out, but the mine has been turned over to Mr. McLure, who will keep it in operation.

American Kootenai Mining Company.—This company is increasing its men almost daily. A great deal of work has been laid out and planned by Manager Beager. The saw mill is being set up and the lumber for the flume and balance of the plant will be cut. If the weather continues fine it is hoped to get the plant running by July 1st.

Fisher Creek.—This company is putting steel rails in the tunnels for their large ore cars. Everything in and about the mine and mill is in first-class shape, and Manager Murphy hopes to run all season a double shift. Tunnels No.'s 1 and 2 are being driven ahead, and cross-cutting and stoping continues to show good quartz.

Standard.—Herman Hilderbrant is doing a great deal of work on this gold group near Kalispell. It has become necessary to lay pipes to conduct fresh air to the men working in the tunnel, which is in over 750 ft.

Granite County.

(From Our Special Correspondent.)

Coloma District.—A company of Deer Lodge and Minneapolis men is erecting a hoist and pumps on the I X L property to develop the extension of the Mammoth vein. A 100-ft. shaft has been sunk some time, from which explorations will be made.

Montana & Denver Reduction Company.—The custom mill at Beartown is again running on full time on the ores from Coloma and Garnet. The cyanide department is improving its extraction by intermediate filling. The total extraction is over 93% and is improving daily.

Madison County.

Centennial Toledo Gold, Silver, Lead and Copper Mining and Smelting Company.—The company is to be under different management and extensive operations are to commence. The new officers are: J. E. Dawson, president; W. H. Nichols, vice-president; Philip Gamer, secretary, and Savin Lisa, treasurer. Alfred Ledoux, superintendent.

(From Our Special Correspondent.)

Revenue.—This mine, which has been closed for a year owing to litigation, is preparing to open again. Messrs. Newhouse and Parsons, of Denver, owning the Revenue, and Mr. Knox and son, of Independence, Mo., owning the Monitor and the Arctic, adjoining, have compromised and the two companies will operate all mines under the management of the Messrs. Knox. The Revenue will be leased and royalty paid for ore taken for specified portions of the vein over which the contention arose. This is high grade gold ore which is either shipped or milled at the Revenue stamp and cyanide mill. The vein is generally of fair width and has been worked to a depth of only 200 ft. The Monitor had produced $400,000 worth of ore from 175 ft. of sinking previous to the closing.

Sand Creek District.—The principal mines in this section are the Chili and the McVey. The Chili is working 30 men and either mills the ore in a 10-stamp mill or ships to Butte. The property is considered profitable. A 5-stamp mill is working on the McVey, which is near the Chili. These mines are located about 5 miles from Sappington on the Northern Pacific Railroad.

Silver Bow County.

Representatives of the Largey estate and of F. Aug. Heinze have been sinking 2 shafts within 20 feet of each other at Meadeville. The Largey shaft was on the Little McQueen placer and the Heinze shaft was on a strip of ground owned by Dr. Whitford. Heinze employed double crews of miners and struck bed rock first, but no vein was visible. It is alleged that the Heinzes then ran a cross-cut into Largey ground, opened a quartz vein and made their location, taking in most of the Largey ground. When the Largey miners went to work next day they found the ground all staked out and an armed guard in possession. The courts will probably have to settle the matter.

Butte Consolidated Mining Company.—This company has the Plumber claim, located recently near the old Boston & Montana Smelter in Meaderville by Edwin Wright. The price was $15,000. The company has also bought for the same figures a ⅜ interest in the Granite Mountain claim from J. H. Mills.

Exemption.—This claim, belonging to the East Butte Company, has a shaft down 100 ft., and sinking continues. Three promising leads have been struck in sinking, and in the shaft at the 100-ft. level 2 others were uncovered.

Homestake.—A big hoisting machine, 20 by 60 in., purchased from the Granite Mountain Company, has been installed. The shaft is down nearly 600 ft., and a tunnel is in 125 ft. to the collar of the shaft. At the mouth of the tunnel 4 60-H. P. boilers are going in. It will there supply power to the pumps connecting with the hoist. George Robertson, who is in charge at Meaderville, is working about 35 men.

Parrot.—The shaft has been retimbered 700 ft. and is being sunk from the 1,000 to the 1,400-ft. At the old smelter and concentrator the tailing dump, the accumulation of 20 years, is being worked over under Superintendent J. S. Dougherty. The present rate is 300 tons daily, and several car-loads of concentrates are produced and shipped to Anaconda. A further supply of water is to be gained by draining Silver Bow Creek. The water will be cleared by filtering through granulated slag.

Smokehouse.—At this shaft, in Butte, a new air compressor is going in to work 3 drills, which will be worked by an independent electric motor. The one first proved a failure. Water is increasing. Miners struck the vein 85 ft. north of the shaft on the 200-ft. level. Thirty feet south of the shaft a number of stringers were found of ore containing zinc and galena, and running for a number of feet. A waterproof electric pump is to be installed.

NEVADA.

Elko County.

Baltimore.—This group of claims, 23 miles north of Elko, has been bonded to A. H. Tarbet, of Salt Lake, on a basis of $49,000, the vender being S. G. Weston, of Elko. The property consists of 6 full claims, all patented. Enough development has been done to disclose some strong veins of ore, which give promise of developing into a good mine. The ore disclosed is a carbonate and silicate of copper.

(From Our Special Correspondent.)

Dexter.—April made a more favorable showing, the clean-up being $11,000, of which $8,000 was in bullion and $3,000 in product from the cyanide annex. Superintendent R. G. Legg reports the mine looking well and the mill running smoothly, and he expects May to make a better showing. The yield for April will a little more than pay the month's expenses. The friction which formerly existed locally against the company has disappeared.

Storey County—Comstock Lode.

Justice Mining Company.—At the annual meeting recently 8,430 shares were represented and the following directors elected for the ensuing year: A. Waterman, H. Zadig, R. E. Kelly, H. C. Stilwell and George C. Sneider. A. Waterman was elected president; H. Zadig vice-president, and Clayton Belknap treasurer.

NEW YORK.

Washington County.

Algonquin Red Slate Company.—The red slate quarry of Robert A. Hall, on Hatch Hill, in Granville, has lately been acquired by this company, which has a capital stock of $20,000. The company has also purchased mills in the region and is manufacturing red roofing slate, floor tiles, borders, hearths, etc., and red and olive paint made from powdered slate. The directors of the company are Robert A. Hall, Elizabeth H. Hall, Caroline Hall and Albert J. Park, and the office is at Truthville.

OREGON.

Baker County.

Free Coinage.—This claim, in the Cracker Creek District, near Sumpter, is owned by Edward Cannon, V. A. Schilling and W. L. Boise of Portland. A tunnel has been driven 480 ft., opening the ground to a depth of 268 ft. Two ore shoots are reported cut. A hoist house and gallows

frame are being erected, and a hoisting plant is on the ground.

Mountain Belle.—This group, near Sumpter, is owned by the Oregon & Pennsylvania Quartz Company. Standard Oil men are reported to be interested. Since October, 1899, considerable drifting and tunneling has been done, and a shaft is down 200 ft.

PENNSYLVANIA.

Anthracite Coal.

It is stated that D. R. Brewer, of New York, announces that the money to build the Reading, Lancaster & Baltimore Railroad has been subscribed in New York and London, and that operations will begin in a month. The road at Reading will connect near Perryville, Md., with the Baltimore & Ohio. It will be a southern outlet for anthracite coal.

Parrish Coal Company.—The strike at this company's Buttonwood Colliery was amicably settled and the miners have returned to work.

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.)

Blue Lead.—The second payment has been made on the Blue Lead copper mine by R. M. Maloney, of Deadwood.

Iron Mountain Company.—This company has made a contract with the American Smelting and Refining Company, of Omaha, to furnish 400 tons of iron ore per month, the amount to be increased as soon as the present supply of ore at the company's smelters decreases.

Monarch Group.—F. C. Graydon, with the Chicago Mica Company, has leased and bonded the Monarch group of mica claims 2 miles west of Custer.

Lawrence County.

(From Our Special Correspondent.)

L. C. Taylor and E. C. Smith, of Omaha, have purchased a group of claims on Fale Bottom Creek, between Garden City and Carbonate. Development work will begin immediately.

Ragged Top Sale.—D. N. Heizer, of Colorado Springs, and W. G. Moore, of Denver, have been in Deadwood several days, and have bonded Ragged Top District, near Calamity Gulch. Allen, Small and associates have been operating a 25-ton cyanide plant on ore from some of the claims purchased.

Garden City District.—Eastern parties have bonded the Realization group of 36 claims owned by Faust, May and associates, of Lead and Garden City.

Golden Reward Smelter.—The company has had a year's contract for coke at $7.25, which expires this month. If the company is compelled to pay the price demanded, $10.05, it will be unable to treat some of the ore now put through. Harris Franklin, general manager, has gone East to get better prices.

Shawmut Mining Company.—A contract has been let for 235 ft. of tunnel in the Esmeralda Mine, in Blacktail District, recently purchased by this Boston company. The plant is to be enlarged soon.

Yellow Creek Cyanide Plant.—Ground has been broken for this 100-ton, which will be put up by John Gray, of Terraville; W. L. McLaughlin, of Deadwood, and others, owners of the Wasp, Flatiron and other mines. R. F. Flinterman, formerly with the Kildonan Company, of Deadwood, is making the plans.

Pennington County.

(From Our Special Correspondent.)

Chilcoot.—The Big Hit Mining Company has bonded the Chilcoot property near Keystone, the consideration being $50,000. The mine is owned by W. W. Challis, T. C. Blair and Alex Madill, of Keystone, and Frank Lockhart, of Rapid City. The shaft is to be sunk to the 200-ft. level.

TENNESSEE.

Maury County.

Mt. Pleasant Phosphate Industry.—The Export Phosphate Company, which recently purchased the J. K. Orr place, has had its spur tracks put in, and is now having a number of drying sheds, etc., erected. The Jackson Phosphate Company is also making many improvements, and is mining much rock. The American Phosphate Company has completed its new plant, which contains the most improved machinery.

TEXAS.

Navarro County.

Corsicana Oil Field.—The report of operations for April shows the following conditions: Wells completed during the month 28, of which 18 were good producers and 10 were dry holes. Nine wells were abandoned as unprofitable, and the pipe pulled. At the close of the month there were 15 wells drilling and 4 rigs ready to begin drilling. The above, in connection with all former development work, gives the following: Total number of producing wells now in the field, 464; total number of gas wells, 13; total number of dry holes, 146; total number of wells abandoned, 133. Production for April was in excess of that of any former month since the field opened.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending May 12th there were sent forward from the different smelteries 20 cars, or 840,725 lbs., lead-silver bullion; 3 cars, or 145,329 lbs., copper bullion. In the same week there were shipped from several producing camps to smelteries outside of the State 76 cars, or 2,598,000 lbs., of lead and silver, gold ores; also 3 cars, or 180,000 lbs., copper ores.

New Furnaces.—The 2 large lead stacks being put in by the American Smelting and Refining Company at the Germania and Mingo plants will probably be ready about the end of May. Manager Jones reports no appreciable change in ore supply, which is highly satisfactory.

Drop in Lead Quotations.—In Utah mining circles the event of the week is the drop in lead from $4.75 to $4.25, attributed to the American Smelting and Refining Company. It was entirely unlooked for, and has caused considerable severe comment, some of which is not warranted. Utah mines for several months have supplied less lead than common. The output of dry gold-silver ores is increasing in the West, with chances of falling off in the required lead ores. In Utah, Bingham, the old reliable lead camp, is now a copper shipper, with a meager tonnage of lead ore; Tintic sends out far less lead ore than formerly, and none comes from Fish Springs. Although Park City markets a goodly supply of lead products, nearly all but those from the Daly-West are shipped to Colorado. From this viewpoint the drop in lead at New York was due to market conditions, and was inevitable.

Telluride Power Company.—Although the first attempt to use aluminum wire, to transmit current from the power station in Provo Canyon, was a failure, the second undertaking is a great success. At first a single wire was used, which kept breaking. The new system uses 3 cables, each of 7 wires. The pole line from Provo Canyon to Tintic, 40 miles, is most substantial. The Tintic station is connected with Mercur, 30 miles distant, and electric power is furnished De La Mar's Mercur mines via Tintic, as readily as by the direct line between Mercur and Provo, but half the distance. By this plan, if 1 line is out of commission, electricity can be supplied by the other. The new cables were strung between Eureka, Mammoth and Robinson, last week. The first Tintic mines to take power will be the Sioux, Utah and Lower Mammoth.

Carbon County.

(From Our Special Correspondent.)

Pleasant Valley Coal Company.—Winter Quarters Nos. 2 and 3 mines are on the opposite side of the gulch from 1 and 4, and are not worked. There is nothing to prevent the resumption of mining in Winter Quarters No. 1 at once, and No. 4 will be ready for operations in a week. It seems probable that no suits for damages will be brought, and that settlements will be made without the intervention of lawyers and courts. By far the larger number who lost their live were Mormons, and the officers of the Church have advised the widows and orphans not to enter suits against the company. Up to May 14th the relief fund has reached $110,000. The other mines of the company, Castle Gate, Clear Creek and Sunnyside—the last not owned by the company, which simply buys the coal—have resumed work.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—In the week of May 12th there were forwarded from the 3 rail points of the district, 78 cars of ore, 5 cars of concentrates and 1 bar of bullion, contributed as follows: Centennial-Eureka, 28 cars; Swansea, 18 cars; Mammoth, 7 cars ore, 2 cars concentrates, 1 bar bullion; Eureka Hill, 5 cars; Gemini, 5 cars; Carissa, 3 cars; Godiva, 3 cars; South Swansea, 3 cars; Uncle Sam and Humbug, 3 cars; Star Consolidated, 1 car; Four Aces, 1 car; Thomas Startin, 1 car.

Tintic Iron.—Messrs. Weir, Newhouse et al. have thrown up their bond and lease, after sinking a 600-ft. and crosscutting from 300, 400, 500 and 600 stations. They were willing to sink to 1,200 ft.—Mr. Weir is convinced it is not probable that a profit-paying ore zone occurs at a higher horizon—but for this a year's extension was asked, which the company refused. There is a rumor current that this ground is to be consolidated with several adjoining tracts to form a new flotation.

Bullion-Beck.—Eureka is pleasantly stirred by a heavy lead ore seam in unexplored ground near the south boundary near the territory of Centennial-Eureka and Eureka Hill. It is 4 ft. thick and arrangements are made for shipments. After running 5 weeks the concentrating mill is closed down.

Centennial-Eureka.—Present production is 100 tons per diem, or 3,000 tons of first-class gold-silver-copper smelting rock a month..

Eagle and Blue Bell.—It is just reported that a 16-ft. quartz vein seam has been cut on the drift from the 200 level, of which 4 ft. is prime shipping ore. The mine has second class reserves believed to be the best milling rock uncovered in Tintic.

Emerald.—Damage by fire was less than first reported. Everything will be in shape for resuming work by May 20th. The new gallows frame will be a great improvement over the old. Outlay necessitated by the fire will not exceed $2,000.

Grand Central-Mammoth.—Although the trial of the pending suit is on the June docket, by mutual agreement it will not be heard before October. On May 10th an arrangement was made whereby Grand Central allows Mammoth to run a drift through a portion of its territory to reach an ore body on its 800 level. In return for this privilege Grand Central is allowed to extend workings from lower Mammoth levels.

Sunbeam.—At the assessment sale the company took in over ½ the capital stock. The outstanding debt exceeds $30,000, and if this was out of the way it is believed the mine can more than meet current expenses.

Salt Lake County.

(From Our Special Correspondent.)

United States.—Several changes in management have taken place, and outside of the leasers the entire working force does not exceed 30 men. Mr. Duncan McVichie has been offered the position of general superintendent. Managing Director A. F. Holden is examining smelter conditions at Butte.

Utah Consolidated.—Hereafter the Highland Boy will be worked on the cave system, this plan having been started in the upper workings from No. 5 tunnel. There is nothing new to report. At present 225 tons are sent daily to the company's smelter.

Summit County.

(From Our Special Correspondent.)

Crescent.—On May 10th the log boarding house was burned, together with adjoining sheds. The damage was slight. A false report was started that the building at mouth of tunnel, containing boilers and compressor plant was destroyed.

Park City Shipments.—In the week of May 12th the smelter products forwarded from Park City aggregated 2,723,140 lbs., made up as follows: Silver King, crude, 1,059,395 lbs.; Daly-West crude, 839,970 lbs.; concentrates, 416,415 lbs.; Anchor, concentrates, 407,360 lbs.

Tooele County.

(From Our Special Correspondent.)

Daisy.—On May 11th A. T. Moon was appointed receiver on the petition of the minority shareowners, and the following day visited the mine in company with Attorney G. W. Moyer. This action was taken to prevent the pending foreclosure sale under the trust deed. It is averred that Receiver Moon will institute suits against several men formerly connected with the company.

De La Mar's Mercur Mines.—The daily hoist is delivering a generous 900 tons of ore to the mill. The ore has an average gold content above that of last fall, while the percentage of extraction is fully as high.

VERMONT.

Orange County.

(From an Occasional Correspondent.)

Elizabeth Mining Company.—At this company's mine at South Strafford we have had much trouble from badly roasted ore, naturally producing low grade matte; but that trouble now seems ended. We have realized what we have long predicted, in getting a much better grade of ore as we go deeper, and there is every prospect of continued improvement. We claim one of the best veins of sulphureted copper ore in this country. The vein is opened about 1,000 ft. in length, with a width of about 40 ft. Only one smelter is running at this time.

WYOMING.

Converse County.

Mattie B.—On this claim at Kirwin, 150 miles from Red Lodge, Mont., the Wood River Mining Syndicate has driven a 400-ft. tunnel and run 100 ft. of cross-cuts. About 25 miners are busy.

Laramie County.

(From Our Special Correspondent.)

Comstock.—Some years ago miners uncovered a narrow vein of copper glance between granite walls. The ore was from 2 to 8 in. thick. The property has been bonded and the new men will sink a shaft 300 ft. as a prospect. The ore frequently assays 70% copper and 15 oz. silver.

Sweetwater County.

(From Our Special Correspondent.)

Carissa.—The main shaft is 300 ft. deep and a cross-cut to the vein shows this to be as large and rich as is any of the upper drifts. This shaft has done much for the Sweetwater mines, showing those who have good veins that values hold with depth. Near the Carissa there is more activity than for many years. Several old-time

mines have been bonded and present indications warrant a lively season.

FOREIGN MINING NEWS.

AUSTRALASIA.

Western Australia.

The gold output of the Colony for April is reported at 113,506 oz. crude gold, which compares with 116,570 oz. last year. For the 4 months ending April 30th the total was 501,225 oz., against 433,321 oz. in 1899, an increase of 67,904 oz., or 15.7%, this year.

CANADA.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

Development Work at Rossland Mines.—Much progress is reported in the following mines: Josie, No. 1, Columbia & Kootenay, Nickel Plate, White Bear, California, Center Star and War Eagle. The only mine at present shipping is the Le Roi, the average weekly shipments being about 15 cars.

Kelict.—The management had found the outcrop of a new vein of pay ore, which will be developed.

Sunset No. 2.—Operations have been suspended for the present. The managing director of the Canadian Gold Fields, which own the property, was recently stricken with smallpox in Montreal, but is recovering. It is said to be the policy of this company to work its silver properties in East Kootenay, and no work will be done on the Sunset for some time.

British Columbia—Yale District.

(From Our Special Correspondent.)

Iron Mask.—The development work on this Kamloops claim now shows the lead to be 14 ft. wide. Negotiations with a New York syndicate for purchase are in progress.

Kimberly.—The amount of $48,500 was paid April 21st by a syndicate of Windsor, Ont., and Cleveland, O., men. The new company has 1,000,000 shares, par value $1 each. Development is to be concentrated on the Charlotte group, where considerable work has already been done.

Ontario—Algoma Division.

Algoma Central Railway Company.—The bill granting Government aid recently passed by the Ontario Legislature grants 7,400 acres of land for every mile of the railway which may be constructed. The road is to run from Sault Ste. Marie almost due north to intersect the Canadian Pacific, and must throw off a branch to Michipicoton Harbor, the total line being from 200 to 225 miles in length. The lands granted are to be in alternate blocks of 148,000 acres each. They are to be conveyed in fee simple to the company and shall include all ores, mines and minerals, as well as all standing timber. For the pine, however, the company shall have to pay whatever price the Government gets for the pine on the alternate blocks not granted to the company. All nickel ore or combined ore of nickel and copper found on the lands is to be subject to such regulations as to treating or refining as may be applied to other lands of the Province under any general law. None of the lands granted are to be nearer Sault Ste. Marie than 20 miles, nor nearer to Michipicoton Harbor than 10 miles.

The following conditions are to be fulfilled in order that the company may be entitled to this grant:

1. The railway must be begun before June 1st next, and the whole road must be completed by May 1st, 1903.

2. The Lake Superior Power Company must develop 40,000 H. P. in addition to that already developed at its works; must begin within 60 days the construction of the canal or canals necessary for this increase, and must complete and equip the new power works in 3 years. Also the power company must begin within 60 days to construct smelting and reduction works of an ore capacity of 300 tons per day, and must complete them in 2 years. And the same company must within 60 days begin the erection of chemical works and complete the same in 2 years, such works to be of capacity to use 5,000 H. P. for their operation.

3. The Sault Ste. Marie Pulp and Paper Company must erect a pulp mill additional to that now operated at Sault Ste. Marie, the new mill to have a daily capacity of 50 tons, and to be completed within a year.

4. In the center of each of its blocks of land the Algoma Central Railway Company must place a station, and shall erect a school house and public hall sufficient for the requirements of 500 people.

5. The railway company must establish within a year an immigration office in Toronto and another in Great Britain.

6. The railway company must carry into the country it traverses, 1,000 male settlers each year for the next 10 years, each male settler to be not less than 16 years old.

7. The railway company must establish a line of not less than 4 steel steamships for regular traffic between Michipicoton and Sault Ste. Marie, each vessel to be of not less than 2,000 tons capacity.

8. None of the pine or spruce on the company's lands shall be exported in the unmanufactured state.

COAL TRADE REVIEW.

New York. May 18.

Anthracite.

Warm weather during the week killed any interest that the retail trade might have in anthracite. The use of gas and oil stoves for domestic purposes is becoming more and more general every summer. It would arouse the surprise of some men in the coal trade if they knew the proportion of such stoves used during summer in rural districts.

Wholesale trade shows a slight improvement in Chicago territory, but the volume of business is very small. Business at the head of the Lakes is light also. Shipments from Buffalo are not heavy, the present condition of the Lake freight market favoring lower rates later on. At Eastern points there is very little doing. Some coal is going inland to points reached by the canals, some is going to points beyond Cape Cod.

The companies are holding down output, but stocks are increasing. There is no more disposition to make concessions than for several months, and prices are pretty well maintained. The steam sizes feel the restrictions on output, and continue hard to get. Consumers at Western points complain that they can't get pea; considering the demands of Eastern consumers for this size they are not likely to be satisfied for some months.

We quote free-burning white ash as follows: Broken, $3@$3.20; egg, $3.30@$3.50; stove, $3.60@$3.70; nut, $3.60@$3.70; pea, $2.40@$2.80; buckwheat, $2.10@$2.35.

Notes of the Week.

Shareholders of the Central Railroad of New Jersey at the annual meeting in Jersey City on May 11th re-elected the old board of directors as follows: George F. Baker, Harris C. Fahnestock, James A. Garland, Henry Graves, Charles Lanier, Henry W. Maxwell, J. Rogers Maxwell, Samuel Sloan, Frederick G. Bowne. Executive officers will remain unchanged with George F. Baker as chairman of the board, J. Rogers Maxwell, president; C. H. Warren, first vice-president.

Bituminous.

The Atlantic seaboard soft coal trade shows a slightly better demand than last week, but the amount of coal offered is still in excess of this demand. Prices, consequently, are not advancing, and ordinary grades of Clearfield can be had without trouble for $2.50 f. o. b. New York harbor ports. The best grades can be had for $2.60. Purchasers do not have to hunt for sellers at these figures.

There are no new developments in the George's Creek strike. The operators since the violence that followed an attempt to work some of the mines have made no attempt to begin mining. It is currently reported that the union leaders in anticipation of such a move have been patrolling some of the mines.

Trade in the far East is dull and demand is slack. Similar conditions prevail along the Sound and at New York Harbor ports. Those consumers who have relied on George's Creek coal are taking Clearfield, or other grades, to keep going, and have no trouble in getting enough. There is some stocking up going on, and along the Sound supplies on hand are reported larger than at any time this year. Foreign inquiries continue. Shipment of single cargoes have been a common feature of the trade for some time, but now we hear of one or two medium-sized contracts for future delivery closed. With the domestic market in its present shape there is no doubt but that shipments would be much larger, particularly to South American ports, were not ocean freight rates so high. A number of European governments have been after American coal, but the contracts they offered were from 300,000 to 1,000,000 tons, and no operator, with domestic consumption as heavy as it is, cares to be tied to contracts of that size.

Car supplies at the collieries is good, as is transportation from mines to tide. In the coastwise vessel market large vessels are in good supply, but craft under 1,000 tons are not to be had at the lower ports. Freights from Philadelphia are: Providence, New Bedford and the Sound, 70c.; Boston, 75c. for large craft, 80@85c. for small craft.

Birmingham, Ala. May 14.

(From Our Special Correspondent.)

There has been no abatement in the demands upon the Alabama coal operators, and every ton of coal that can be mined is finding a ready sale. There will be a general advance in the selling price of the product as soon as the warm weather is over, that is certain. There will be no reduction during the summer. The Mississippi River trade is active. The shipments via rail are extraordinarily large also, and the local demands are exceedingly large. During the past week W. T. Underwood, R. H. Thach and J. J. Garrett filed declaration of incorporation for the Underwood Coal Company, with capital stock $50,000.

More miners are needed throughout the mining section of the State and coal diggers are being given employment whenever they apply.

Chicago. May 15.

(From Our Special Correspondent.)

Anthracite Coal.—Anthracite coal has only been in limited demand. There appears a waiting tendency on the part of consumers, and it is understood that there is some good inquiry coming in for round lots of coal, mostly for out-of-town trade, but such inquiries are not leading to business as fast as desired. The prevailing circular prices, $5 for grate and $5.25 for egg and stove, are booked to stay for the month of June.

Bituminous coal has had another week of moderate demand and heavy supply, the railroads are bringing large quantities to town. There continues a good demand for steam coal from manufacturing and railroad lines. Prices are shaky and on large business good concessions are made.

Cleveland, O. May 15.

(From Our Special Correspondent.)

The coal shippers are very evidently on the upper hand just now as regards the transportation of their commodity on the lakes. The supply of coal here during the week has been very limited. At times it was not much more than would have filled the contract boats, which have been laying at the docks, while at other times enough was on hand to take care of a very few of the wild boats that were being offered. Tonnage is almost a glut on the market on the lakes just now, and the shippers have had about their pick of vessels. The temptation was too strong to break the rate and they yielded, causing a break to-day for the first time this year. To-day the wild rate to Escanaba was established at 50c., which was a reduction of 5c. on the ton and an effort will be made to-morrow to place boats to the other ports.

At times this week the shippers have had coal enough to load more boats than they have chartered, but could not get sufficient dock space. The Hocking Valley dock at Toledo has been in process of rebuilding and consequently has not been available. A similar condition on some of the other docks has caused some delay in the transportation of coal. Railroads are having no difficulty in getting the coal to the lakes as the car supply is and has been abundant. The operators say they are having some difficulty in getting the coal mined and are able, therefore, to furnish it in no large quantities.

Pittsburg. May 16.

(From Our Special Correspondent.)

Coal.—There is no change in the situation and with but few exceptions all the mines in the district are in full operation. A few local strikes occurred at some of the mines, but they were speedily settled. The two coal combinations are bringing more men into the district and are making every effort to increase the output. Indications point to one of the greatest years in the coal trade in this district. Prices remain the same as were announced on April 1st. The rivers are too low to ship coal to Southern ports, and the stock is accumulating, there being fully 15,000,000 bus. loaded and ready to go out on the first rise.

Connellsville Coke.—The price has dropped during the week and furnace coke is quoted at $3.50 and foundry $3.50@$4 a ton. This is due to the unsettled condition of the iron and steel market. Of the 20,263 ovens in the region 19,693 are in operation and 570 are idle. The production last week was 218,419 tons, an increase of 809 tons compared with the previous week. The shipments aggregated 11,051 cars, distributed as follows: To Pittsburg and river tipples, 2,550 cars; to points west of Pittsburg, 6,052 cars; to points east of Connellsville, 2,440 cars. This is a decrease of 510 cars compared with the previous week.

SLATE TRADE REVIEW.

New York. May 18.

Orders are increasing, and with warmer weather the consumption of roofing slate improves, though it is claimed sales are less than last year. Prices are practically unchanged.

The shipments from Slatington and Walnutport, Pa., in the week ending May 10th, were 5,539 squares of roofing slate; 42 cases school slates, and 74 crates blackboards.

In export circles some further orders for roofing slate to go to Great Britain are reported. Freight rates show little change, and to London 15s. is nominal.

The exports of slate through the port of New

York in the four months ending April 30th were as below, comparison being made with last year:

	1899		1900	
	Roofing. Sqs.	Mfrs. Value.	Roofing. Sqs.	Mfrs. Value.
January..	8,955	$42,555	$5,669	8,700	$41,715	$3,223
February.	14,850	68,163	8,634	6,250	32,260	3,477
March....	18,700	87,140	9,396	3,250	16,258	5,750
April.....	12,700	64,445	8,496	3,450	17,855	11,000
Totals..	55,205	$262,303	$32,195	21,650	$108,088	$23,450

Thus far this year the exports show a decrease of 33,555 squares of roofing slate, and $8,745 of manufactures.

The distribution of exports in the four months from New York were as follows:

Countries.	1899.	1900	Changes.	
United Kingdom.....	$220,496	$84,738	D.	$135,758
Australasia.....	17,594	24,725	I.	7,131
Denmark.....	4,436	6,703	I.	2,267
Germany.....	33,251	2,340	D.	30,911
Norway.....	463	1,309	I.	846
Belgium.....	5,425	825	D	4,600
India.....	7,065	3,539	D.	3,226
Africa.....	1,357	1,011	D.	346
South America.....	552	2,621	I.	2,069
W. I., C. Am. & Mex.	2,110	2,997	I.	887
All other.....	1,749	430	D.	1,319
Totals.....	$294,498	$131,538	D.	$162,960

The most noteworthy falling off in exports this year is shown in the figures for the United Kingdom, which amounts to $135,758, or 61%.

The list of prices per square for No. 1 slate, standard brand f. o. b. at quarries in carload lots, is given below:

Size, inches	Monson or Br'nville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.10	3.50	3.00	3.25	3.10	5.10	3.15	...	.....
24 x 12	6.60	3.50	3.00	3.25	3.10	5.25	3.15	3.75	.....
22 x 12	6.60	3.50	3.25	3.50	3.25	5.25	3.15	3.75	.....
22 x 11	6.50	3.75	3.25	3.50	3.25	5.25	3.15	4.00	.....
20 x 12	6.90	3.75	.....	3.50	3.25	5.25	3.15	3.75	.....
20 x 11	6.80	.....	.....	3.75	3.50	5.25	3.15	.....	.....
20 x 10	6.80	4.50	3.50	3.75	3.50	5.35	3.15	4.25	11.00
18 x 12	6.80	3.75	.....	3.50	3.25	5.25	3.15	3.50	.....
18 x 11	7.00	.....	.....	.....	.....	.....	3.15	3.75	.....
18 x 10	7.20	4.50	3.50	3.75	3.50	5.35	3.15	4.00	11.00
18 x 9	7.10	4.50	3.50	3.75	3.50	5.35	3.15	4.25	11.00
16 x 12	6.80	3.75	.....	3.50	3.50	.....	2.95	3.50	.....
16 x 10	7.10	4.25	3.50	3.75	3.50	5.25	2.95	4.00	11.00
16 x 9	7.00	4.25	.....	3.75	.....	5.35	2.95	4.25	11.00
16 x 8	7.20	4.50	3.50	3.75	3.10	5.35	2.95	4.25	11.00
14 x 10	6.60	3.75	3.25	3.25	.....	5.25	2.85	3.75	11.00
14 x 9	6.50	.....	.....	.....	.....	.....	2.85	3.75	11.00
14 x 8	6.60	3.75	3.25	3.25	3.10	5.10	2.85	4.25	11.00
14 x 7	6.40	3.75	3.25	3.25	3.10	5.10	2.60	4.25	11.00
12 x 10	5.80	.....	...	.....	.....	...	2.60	3.25	.....
12 x 9	5.60	.....	.....	.....	.....	.....	2.60	3.25	.....
12 x 8	5.50	3.50	.....	3.00	2.80	4.85	2.60	3.50	9.50
12 x 7	5.00	3.25	.....	3.00	2.80	4.85	2.50	3.50	9.50
12 x 6	4.80	3.25	.....	3.00	2.80	4.75	2.50	3.50	9.50

A square of slate is 100 sq. ft. as laid on the roof.

IRON MARKET REVIEW.

New York, May 18, 1900.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending May 19, 1899. F'ces.	Tons.	Week ending May 18, 1900. F'ces.	Tons.	From Jan., '99. Tons.	From Jan., '00. Tons.
An' racite & Coke.	197	246,350	266	288,525	4,670,565	5,668,558
Charcoal.	20	4,925	24	6,250	99,323	143,547
Totals..	217	251,275	290	294,775	4,769,888	5,812,105

The iron market is still a waiting one, but conditions seem rather better. Undoubtedly buyers of pig iron and steel billets will do their best to secure concessions, and will meet with some success. On the other hand the time is growing short for those whose contracts run only over the first half of the year, and they are many in number. The waiting time must end soon, and the result will probably be a compromise.

In finished material there is nothing new, except that the demand for structural steel continues good. The bar mills are full of trouble, and those in the combination are trying very hard to get the outsiders where they can be disciplined.

Export inquiries continue very active, and everything points to a large volume of foreign trade in the second half of the year.

Birmingham, Ala. May 14.

(From Our Special Correspondent.)

The pig iron market in Alabama is yet in a very satisfactory condition with large amounts of iron being sent away from here for domestic and export purposes. The export business is taking up all the iron that is not being used in the domestic market, and there are indications that all the business that the furnacemen desire to handle with foreign buyers can be secured. Some of the export demands are for immediate shipment. During the past week the Sloss-Sheffield Steel and Iron Company received an order for 1,000 tons of iron to be shipped to Copenhagen, and it was stipulated that the iron was to be started within the month of May. Ship room is being inquired after with much interest by the furnacemen and the officials of railroads in this section are giving all the assistance in their power.

The report of the Southern Iron Committee for the month of April shows that from the States of Alabama and Tennessee there were shipped 109,978 tons of iron; from the Birmingham district alone, 69,938 tons; for export 8,651 tons. Pipe shipments from Alabama and Tennessee, 5,838 tons; from the Birmingham district alone, 1,818 tons; for export, 1,577 tons. These shipments are not as heavy as they were last April, but the explanation is made that during April, 1899, there was still surplus iron on the furnace and warrant yards which was being moved off.

The rolling mills are accumulating considerable stock in this section, but during this week the Amalgamated Association of Iron, Steel & Tin Workers will hold their annual meeting and the amount of stock on hand will play an important part in the deliberations.

The steel plant at Ensley is doing well, shipments during the month of April amounting to about 6,000 tons. The steel wire, rod and nail plant adjoining the steel mill is doing well now, more men being put to work in the plant right along. Several good orders are on hand and employees are being put on every week, many men from the West coming here to get labor. The cuts in the products of the wire, rod and nail mills are being met by the Alabama company.

The Dimmick pipe plant at North Birmingham will hardly be ready for operation until June 20th, the accident which occurred there two weeks since, delaying the time for commencement at least 40 days.

The small steel plant of the Republic Iron and Steel Company, located at the Birmingham rolling mills is silent. The full force is not at work in the mills either and a little quiet spell is on as far as finished iron is concerned.

The Sloss-Sheffield Steel and Iron Company has started one of their city furnaces again after a shut down of four or five days, caused by the destruction of the stock houses and coal washers last week. The other furnace will hardly be ready to resume operation within two or three weeks. The supply of raw material in this State is becoming more abundant, new labor being brought to the district. A lot of Italian labor was brought up last week from New Orleans to work in the ore mines in the Russellville District.

The quotations are not as strong as they have been, though the furnacemen say they are firm. The following figures are given: No. 1 Foundry, $17.75@$18.50; No. 2 Foundry, $17@$17.50; No. 3 Foundry, $16.50@$17; No. 4 Foundry, $15.75@$16.25; Gray Forge, $15.50@$16; No. 1 Soft, $17.75@$18.50; No. 2 Soft, $17@$17.50.

Buffalo. May 16.

(Special Report of Rogers, Brown & Co.)

The deal-lock continues. Buying is almost entirely from hand to mouth and in car-load to 100 and 500-ton lots, all for quick delivery. There seems to be generally more of a feeling among the gray iron foundries, however, that we have seen the worst of the storm and that very soon a more settled condition can be counted on, with prices on a firmer basis, so that orders can safely be placed farther ahead. We quote below on the cash basis f. o. b. cars Buffalo: No. 1 Strong Foundry Coke Iron, Lake Superior ore, $23; No. 2, $22.50; Ohio Strong Softener, No. 1, $23.50; No. 2, $23; Southern Soft, No. 1, $23.50; No. 2, $22.50; Lake Superior Charcoal, $26; Coke Malleable, $22.50.

Chicago May 15.

(From Our Special Correspondent.)

Pig Iron.—The pig iron market remains on a par with last week, buying not being large. Consumers appear to be waiting and hesitate about placing contracts for anything much beyond immediate wants. The furnaces continue to ship about all iron made, and this keeps the market strong and assures no immediate lowering of prices. Southern furnaces are upholding prices as follows: Lake Superior Charcoal, $24.50@$25.50; Local Coke Foundry, No. 1, $23@$23.50; No. 2, $22.50@$23; No. 3, $22@$22.50; Local Scotch, No. 1, $23@$23.50; Ohio Strong Softeners, No. 1, $24@$24.50; Southern Silvery, $25.50@$27; Southern Coke, No. 1, $22.35@$22.85; No. 2, $21.35@$22.85; No. 3, $20.35@$20.85; No. 1 Soft, $22.35@$22.85; No. 2 Soft, $21.35@$22.35; Foundry Forge, $20.85; Malleable Bessemer, $23.50@$24.

Cleveland, O. May 15.

(From Our Special Correspondent.)

Iron Ore.—With conditions that ought to argue a good strong market, exactly the converse is true, which is rather puzzling to those who deal in iron ore. The season opened with practically all of the good ore shipped away from the lakes, the amount on the stock piles being 350,000 tons short of what it was at the opening of the season last year. The shipment away from the docks so far this year has shown itself to be in accordance with the shipments of other years, hence it would naturally be supposed that the market would be strong. Instead little or no ore is to be secured at the head of the lakes, hardly enough to keep the contract boats busy and in consequence the wild rate has been established away below the contract rate and has been twice reduced. The carrying rate from Escanaba were orginally fixed at 80c., which is 20c. below contract price, and were to-day reduced to 70c. The rates from the head of the lakes were established at $1.05, which is also a reduction of 20c. Yesterday also some charters were made at this figure to Buffalo, which is virtually a reduction of 10c. as Buffalo owners get a differential over Ohio ports. The cause of this break is evidently the scant supply of ore that is coming from the mines.

Pig Iron.—The market is still a waiting one, with but few sales being made. The furnaces are still shipping heavily of contract stuff, but are selling only carload lots on the market. The business is quiet pending the establishment of a price. No definite quotation can be made on either No. 1 or No. 2 Foundry. The minimum price is $21 for No. 2 and $21.50 for No. 1, while sales have been made at a dollar higher than either of these.

Finished Material.—During the week buyers have been busier than at any one time during the last few months. Contracts have been made for large amounts of steel plate and structural iron, and bidders were on the market for other stuff. The dealers are unable to account for the increase in business unless it is due to the reduction of the prices on plates, which dropped from 1.85 to 1.70c. There has been a story that the combination of prices on beams, channels, angles and bars has been broken, but this report lacks substantiation.

Scrap Iron.—The market has hardly changed in a week. No great demand has been experienced for old iron, and, in fact, little if any business seems to have been done. The purchasers are waiting on future developments.

Philadelphia. May 17.

(From Our Special Correspondent.)

Pig Iron.—Leading brokers have had more calls and correspondence this week, but up to noon to-day none were able to report any transaction of moment. The attitude of most buyers is one of delay. The belief is that the depression at work will put prices at least 50c. below bottom prices to-day. Quotations are: No. 1 Foundry, $22.50, with rumor of $22; No. 2, $20.50@$21.50; No. 2 plain, $19.50@$20.50; Gray Forge, $17.50@$18.25; Bessemer, nominal, and no buyers asking prices. There is a little buying of charcoal iron.

Billets.—Last week's drop to $29 on Thursday morning was no surprise and another drop will be less. The billet market is about dead, although there are customers ready to launch out when prices drop to $30 here.

Merchant Bars.—Prices are a trifle lower and business a trifle larger. Common is quoted at 1.60@1.65c.; refined, 1.75@1.85c.

Sheets.—Manufacturers do not admit things are against them, but assert the industry is well able to stand up under the present sag. Buyers don't think so.

Merchant Steel.—There has been a general sag in most lines of merchant steel used in the East. Most of our big users have considerable steel due them on old contracts.

Pipes and Tubes.—Exporters are talking a good deal about possibilities when prices ease off. The demand for the present is nothing to speak of.

Plate.—Eastern Pennsylvania plate mills so far as work is concerned have all they are able to do. Tank plates, steel, are quoted 1.80@2.00c., and other kinds in same proportion. Boilermakers are all busy. The shipyard work is crowding and bridge work is up to expectations.

Structural Material.—There is a renewal today of the rumor of a coming drop. Angles are 2.40c.; beams and channels, 2.50c.

Steel Rails.—Rail makers do not say that rails will drop to $33 about June 1st, but some other people who know less on the subject do say so.

Scrap.—Very little scrap has been gathered up this week for delivery on old contract. There is no change in prices.

Pittsburg. May 16.

(From Our Special Correspondent.)

The market has experienced another week of unusual quietness in all lines. Consumers continue persistently to hold off for lower prices and the indications are that the market will not brighten until concessions are made by the manufacturers. Independent mills have been shading steel bars to such an extent the last few days that the Bar Association discussed the advisability of making another reduction at its monthly meeting in this city Tuesday. It was the impression of some of the members that lower prices ought to regin so that this competition could be met, while others held that to make another reduction would again unsettle matters, and it was finally concluded to leave the quotations as they were, with the conditions that members would be permitted to shade prices in competition with independent mills, but not when competing for business with any of the mills in the agreement. While steel bars are being held by agreement at 2c., as low as 1.75c. has been done by independent mills who have secured the bulk of the business by these reductions. The demand for structural material continues very good and all the mills in this district are being operated at their fullest capacity at the present time, and enough orders are on their books to insure steady operations for several months at least.

Pig Iron.—There has been very little doing during the week. Consumers are buying small lots only for immediate consumption and are not even making inquiry for iron for future delivery. No. 2 Foundry has been shaded somewhat on small lots and $21.25@$21.50 can readily be done. On Forge iron $19.75@$20 is being offered. Bessemer is still being held nominally at $24, Valley, with no sales of importance. The price for the second half has not yet been decided upon, but it is certain that it will be below $24 in view of the decline on steel.

Steel.—No sales of importance have been reported either on steel billets or sheet bars. Local mills are holding the former at $30@$31, while sheet bars, although no sales have been made to establish a quotation probably can be had for $32 at maker's mill. Tank plates continue low and are quoted at 1.65@1.70c. Other grades of plates, such as flange and shell, are correspondingly low.

Sheets.—At the local office of the American Sheet Steel Company, it is reported that the demand for sheets is comparatively good, and that considerable business for future delivery is being done. The combination has as yet failed to issue a price list to the trade and continues to make quotations of specifications only. Black sheets No. 28 gauge are held at 3.30c., while galvanized is quoted at 70 and 10% with the usual 15c. freight allowance.

Ferro-Manganese.—While 80% is being held at $125 nominally, Pittsburg, it is certain that this price can be shaded for desirable orders.

New York. May 18.

The local iron market continues unsettled, with some finished products selling at slightly lower prices. In foreign trade we note shipments of $20,000 worth of iron tanks and $13,000 worth of manufactured iron to Brazil; $30,000 worth of machine tools to Belgium; $66,000 worth of manufactured iron, $60,000 worth of electrical machinery and $13,000 worth of pig iron to Australia; $100,000 worth of agricultural tools and implements, and $18,000 worth of metal-working machinery to France; orders for and shipments of machine tools to Germany, amounting to $107,000; shipments of $37,000 worth of manufactured iron to Argentina; $40,000 worth of agricultural implements to Germany, and orders for $90,000 worth and shipments of $51,000 worth of railroad supplies and equipment for Portugal.

Pig Iron.—The market shows no change, prices are no better, neither are they worse, but the situation cannot be called strong. We quote for tidewater delivery: No. IX foundry, $23@$23.50; No. 2, $21.50@$22; No. 2 plain, $20.50@$21; Southern brands, New York delivery: No. 1 foundry, $22.50@$23; No. 2 foundry, $21.25@$22; No. 1 soft, $22.50@$23; No. 2 soft, $21.25@$22; No. 3 foundry, $21.25@$21.50.

Bar Iron.—Common bars are quoted 1.95c.@2.05c. for large lots on dock; refined bars, 2.05c.@2.10c.; but these figures are shaded.

Plates.—The market is weaker than for any other finished product, and prices have declined. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 1.75@1.85c.; tank, 3-16-in., 1.85@2c.; shell, 2.05s.; flange, 2.15c.; marine, 2.25c.; firebox, 2.50c.; universals, 1.75@1.85c.

Steel Rails and Rail Fastenings.—Foreign inquiries are as plentiful as ever, and the market is in pretty good shape. We quote for standard sections, $35 f. o. b. Eastern mills. Smaller rails are quoted: 12-lb., $40; 16-lb., $40; 20-lb., $40; 30-lb. to 40-lb., $38; 40-lb. to standard, $36, with the usual advance for small orders. We quote angle bars, 2.30c.; fish plates, 2.30c.; spikes, 2.70c.

Structural Material.—The market remains firm, with contracts for good-sized lots being closed right along. We quote in large lots at tidewater: Beams, 2.40@2.45c.; channels, 2.40@2.45c.; angles, 2.40c.; tees, 2.40c.

Cartagena, Spain. May 1.

(Special Report of Barrington & Holt.)

Iron and Manganiferous Ores.—During the past month 27 cargoes of iron ore have been shipped from this port, 19 of which were of dry ore and 8 of manganiferous ores. From March 20th the Spanish Government has imposed a new export tax of 20 centimos per ton of iron ore which, of course, has caused much dissatisfaction among the shippers through all Spain. Over and above this tax a tax of 5% has been imposed on railway transport of iron ore. On the other hand the navigation dues on steamers loading for America have been reduced from 1 peseta to 20 centimos per ton. The position of the market is very firm. Owing to some new firms having started to stock ore prices are somewhat higher in certain mines that are open to all buyers. Freights are all round very firm and tonnage seems difficult to secure.

Quotations are: Ordinary, 50% Portman ore, 7s. 6d.@8s. per ton; low phosphorus, 7s. 10d.@8s. 2d.; special ore, 0.03 phosphorus, 9s.; specular, 60% ore, 11s. For manganiferous ore we quote: No. 1, 2% iron and 20% manganese, 15s. 6d.; No. 1B, 25% iron and 17% manganese, 12s. 6d.; No. 2, 30% iron and 15% manganese, 12s.; No. 3, 35% iron and 12% manganese, 10s. All prices are f. o. b. shipping port.

METAL MARKET.

NEW YORK, May 18.

Gold and Silver.

Gold and Silver Exports and Imports

At all United States ports in April and year.

Metal.	April. 1899.	April. 1900.	Year. 1899.	Year. 1900.
GOLD.				
Exports	$1,162,484	$1,961,580	$4,595,742	$10,120,878
Imports	2,482,871	3,355,115	17,211,696	9,163,651
Excess	I. $1,320,387	I. $1,393,535	I. $12,615,954	E. $957,227
SILVER.				
Exports	4,082,567	4,112 043	18,840,100	19,118,308
Imports	1,849,231	3,266,283	9,530,969	11,331,859
Excess	E. $2,233,336	E. $845,760	E. $9,309,131	E. $7,786,449

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending May 17th, 1900, and for years from January 1st, 1900, 1899, 1898, 1897.

Period.	Gold. Exports.	Gold. Imports.	Silver. Exports.	Silver. Imports.	Total Excess, Exp. or Imp.
We'k	$3,225,464	$23,475	$1,033,985	$79,282	E. $4,186,692
1900..	12,945,072	1,351,669	14,978,454	1,720,341	E. 24,821,516
1899..	2,150,314	5,914,199	10,238,301	1,143,239	E. 5,331,267
1898..	4,436,939	66,314,610	13,525,194	1,720,800	I. 50,073,347
1897..	7,170,817	1,473,426	15,912,138	896,741	E. 20,712,818

Exports of gold were chiefly to France; of silver to London. Imports of gold were from the West Indies; of silver, from South America.

The United States Assay Office in New York reports the total receipts of silver at 66,000 oz. for the week. Total since January 1st, 1,989,000 oz.

Average Prices of Silver per oz. Troy.

Month.	1900. Lond'n Pence.	1900. N. Y. Cents.	1899. Lond'n Pence.	1899. N. Y. Cents.	1898. Lond'n Pence.	1898. N. Y. Cents.
January...	27.30	59.30	27.42	59.36	26.29	56.77
February..	27.49	59 76	27.44	59.42	25.89	56.07
March.....	27.59	59.81	27.48	59.64	25.47	54.90
April.....	27.41	59.59	27.65	60.10	25.95	56.02
May.....	.....	.....	28.15	61.23	26.31	56.98
June.....	.....	.....	27 77	60.43	27.04	58.61
July.....	.....	.....	27 71	60 26	27.32	59.06
August....	.....	.....	27.62	60.00	27 48	59.54
September	.....	.....	27.15	58.89	28.05	60.68
October ..	.....	.....	26.70	57.98	27.90	60.42
November	.....	.....	27 02	58.67	27.93	60.60
December.	.....	.....	27.21	58.99	27.45	59.42
Year....	.....	.....	27.44	59.58	2.76	58.26

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER. 1900.	COPPER. 1899.	TIN. 1900.	TIN. 1899.	LEAD. 1900.	LEAD. 1899.	SPELTER 1900.	SPELTER 1899.
Jan.....	15 53	14.26	27.07	22.48	4.68	4.18	4.65	5.34
Feb.....	15.78	17.02	30.58	24.20	4.675	4.49	4.64	6.28
March....	16.29	16.35	32.90	23.82	4.675	4.37	4.60	6.31
April....	16.76	17.13	30.90	24.98	4.675	4.31	4.71	6.67
May.....	.....	17.20	.....	25.76	.....	4.44	.....	6.88
June.....	.....	16.89	.....	25.85	.....	4.43	.....	5.98
July.....	.....	17.10	.....	29.63	.....	4.52	.....	5.82
August..	.....	17.42	.....	31.53	.....	4.57	.....	5.65
Sept.....	.....	17 34	.....	32 74	.....	4.58	.....	5.50
October..	.....	16.94	.....	31.99	.....	4.575	.....	5.32
Nov.....	.....	16.49	.....	28.51	.....	4.575	.....	4.64
Dec.....	.....	15.85	.....	25.88	.....	4.64	.....	4.66
Year.....	.....	16.67	.....	25.12	.....	4.47	.....	5.75

Commencing with March 17th, the prices given in the table for copper are the averages for electrolytic copper; this is the case for both 1899 and 1900. The average price for Lake copper for the year 1899 was 17.61c. For January, 1900, the average price of Lake copper was 16.33c.; for February, 16.08c.; for March, 16.55c.; for April, 16.94c.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .47¾	$ .49
Peruvian soles and Chilean pesos	.44	.46
Victoria sovereigns	4.86	4.88
Twenty francs	3.86	3.90
Twenty marks	4.75	4.88
Spanish 25 pesetas	4.78	4.82

Financial Notes of the Week.

Business continues steady and generally active, dulness being confined to the speculative markets. Gold to the amount of about $2,500,000 has been taken for shipment this week, chiefly to Paris. The profit is very small, however, and it looks very much as if this outward gold movement would soon be at an end. The total shipments have been less than our current production of gold.

The statement of the United States Treasury on Wednesday, May 16th, shows balances in excess of outstanding certificates as below, comparison being made with the statement of the corresponding day last week:

	May 9.	May 16.	Changes.
Gold.....	$77,061,920	$73,390,827	D $3,671,093
Silver	8,977 188	10,567,372	I 1,590,184
Legal tenders.....	13,422.692	14,591 909	I 1,169,217
Treas. notes, etc...	708,800	709,072	I 272
Totals	$100,170,600	$99,259 180	D $911,420

Treasury deposits with national banks amount-

Imports and Exports of Metals.

Port.	Week, May 16. Expts.	Week, May 16. Impts.	Year 1900. Expts.	Year 1900. Impts.
***New York.**				
Aluminum.....long tons	.....	.....	62	33
Antimony ore... " "	.....	.....	.....	1,164
" regulus.. " "	.....	**10		505
Chrome ore..... " "	.....	.....		151
Copper, fine ..... " "	2,157	365	41,020	8,981
" matte.. " "	30	....	1,374	....
" ore..... " "	.....	.....	.....	640
" ash..... " "	.....	**10	.....	51
Ferro-Chrome .. " "	.....	.....	.....	10
Ferro-mangan'se " "	.....	.....	.....	152
Iron ore..... " "	.....	.....	.....	7,874
" pig, bar, rod " "	10	**310	2,895	1,883
" pipe..... " "	392	.....	6,301	124
" plates, sheets " "	.....	.....	772	43
Lead..... " "	800	1,460	31,579	32,306
" ore..... " "	.....	.....	.....	7,300
" dross..... " "	.....	.....	.....	24
Manganese, ore. " "	.....	.....	.....	4,584
Metals, old, scrap " "	76	**60	1,515	3,921
Composition... " "	9	**185	1,015	185
Nails..... " "	126	.....	16,777	.....
Nickel .. " "	.....	.....	809	55
" ore. matte " "	.....	2,301	...	5,122
§Railr'd material " "	.....	**70	495	1,812
Rails, old..... " "	.....	.....	206	518
Spiegeleisen..... " "	.....	.....	.....	1,300
Steel bars, plates " "	498	**33	4,112	8,506
" rails..... " "	476	.....	17 967	18
" wire..... " "	728	.....	7,915	.....
" not speci'd. " "	253	**80	3,272	1,290
Tin..... " "	.....	100	3	10,246
" dross or ashes " "	.....	.....	.....	.....
" and black plates " "	.....	‖906	.....	13,392
Zinc..... " "	.....	**3	22	141
" dross..... " "	24	.....	33	50
" ashes, skim " "	9	.....	497	20
" ore..... " "	.....	.....	6,064	.....
†Baltimore.				
Chrome ore.....long tons	.....	.....	.....	2,930
Copper, fine..... " "	1,401	316	18,407	2,019
" matte.... " "	.....	.....	.....	.....
Ferro-manganese " "	.....	.....	.....	155
Iron pig, bar. etc. " "	44	964	1,536	16,582
" ore..... " "	.....	4,528	.....	196,726
" pyrites..... " "	.....	.....	.....	18 489
Manganese ore.. " "	.....	2,850	.....	78,897
Metals, old & Rails " "	.....	.....	334	.....
Nails ..... " "	31	.....	1,106	.....
Pipe, iron & steel " "	315	.....	2,230	.....
Silicon ..... " "	.....	.....	.....	85
Spiegeleisen..... " "	.....	.....	.....	659
Steel, bars, etc.. " "	661	.....	1,645	1,388
" wire ..... " "	29	.....	640	73
" rails..... " "	3,586	.....	39,101	.....
Tin..... " "	.....	.....	.....	67
" and blackplates " "	.....	.....	.....	1,416
***Philadelphia.**				
Antimony ....long tons	.....	‖6	.....	11
Chrome ore..... " "	.....	.....	.....	300
Copper, fine..... " "	.....	.....	1,417	.....
" ore..... " "	.....	‖2,940	.....	13,632
Iron, pig..... " "	.....	.....	.....	.....
" ore..... " "	.....	‖10,650	.....	23.154
" pyrites..... " "	.....	.....	.....	87,455
Manganese ore.. " "	.....	‖5,380	.....	40,614
Spiegeleisen..... " "	.....	‖193	.....	3,953
Tin..... " "	.....	.....	.....	193
" and black plates " "	.....	‖1	.....	1,558
Zinc ore..... " "	.....	.....	1,500	.....

Total United States.§§

Articles.	March, 1900. Expts.	March, 1900. Impts.	Year, 1900. Expts.	Year, 1900. Impts.
Antimony.. ....long tons	.....	34	.....	531
" ore.... " "	.....	382	.....	730
Copper, fine, in all forms ..... " "	‖20,148	§§3.662	‖46,882	14,156
Iron, pig & bar.. " "	9,125	6,697	28,979	22,645
" ore..... " "	120	95,215	120	276,236
Iron & steel plates " "	3,311	606	7,514	4,003
Iron & steel rails " "	32,808	1	67,329	288
" " wire " "	8,130	194	19,736	453
Lead, pigs, bars & old..... " "	241	591	280	603
Lead in ore, etc. " "	6,723	7,269	21,583	20,155
Manganese ore and oxide..... " "	.....	80,056	.....	135,418
Nickel " & matte " "	277	.....	575	.....
Nails, cut..... " "	939	.....	2,291	.....
" wire..... " "	3,848	.....	12,322	.....
Quicksilver... .. " "	37	.....	144	.....
Steel, billets, rods, etc..... " "	4,771	3,502	11,232	10.552
Tin..... " "	34	3,292	54	8,117
" & black plates " "	19	4,602	40	14,932
Zinc..... " "	2,807	115	5,170	358
" ore..... " "	6,141	.....	10,408	.....

*New York Metal Exchange returns. †By our Special Correspondent. § Not specified. §§ Monthly returns, Treasury Department. ‡ Report of Mr. John Stanton. ‖ Week May 11th. **Week ending May 8th. Exports include domestic and foreign metals.

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead in ores; 2½c. per lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. on pigs and bars, 2c. on sheets, etc Copper, tin and platinum are free of duty.

ed to $112,072,254, a decrease of $2,934,024 for the week.

The statement of the New York banks—including the 63 banks represented in the Clearing House—for the week ending May 12th, gives the following totals, comparison being made with the corresponding weeks in 1899 and 1898:

	1898.	1899.	1900.
Loans and discounts.	$573,667,200	$770,746,100	$787,482,100
Deposits	666,719,900	901,562,300	867,246,300
Circulation	14,693,000	13,827,500	21,308,100
Reserve:			
Specie	163,439,300	196 644,300	163,790,700
Legal tenders	50,237,900	55,883,900	68,353,600
Total reserve	$213,677,200	$252,528,200	$232,144,300
Legal requirements.	166,679,975	225,390,575	216,811,575
Balance, surplus	$46,997,225	$27,137,625	$15,332,725

Changes for the week, this year, were increases of $90,000 in circulation, and $566,100 in legal tenders; decreases of $287,900 in loans and discounts, $1,909,000 in deposits, $1,689,100 in specie, and $645,750 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding date last year.

	1899.		1900.	
Banks.	Gold.	Silver.	Gold.	Silver.
N.Y. Ass'd.	$196,644,300	.....	$163,790,700	.....
England	151,988,430	.....	161,620,915	.....
France	365,195,570	$241,154,855	322 461,430	$227,843,150
Germany	148,455,000	76,475,000	134,640,000	69,360,000
Spain	58,270,000	63,395,000	68,445,000	78,735,000
Aus.-Hun	150,185 000	52,480,000	188 015,000	46 395,000
Neth'l'ds	19,165,000	34,055,000	24,325 000	29,755,000
Belgium	15,385 000	7,700,000	14.955,000	7,480,000
Italy	77,520,000	13,295,000	77.255,000	8.175,000
Russia	485,615,000	23,150,000	419,160,000	36,380,000

The returns of the Associated Banks of New York are of date May 12th and the others are of date May 10th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

Shipments of silver from London to the East for the year up to May 3d, 1900, are reported by Messrs. Pixley & Abell's circular as follows:

	1899.	1900.	Changes.
India	£1,533 300	£1,723,160	I. £189.860
China	475,338	138,460	D. 336,878
The Straits	24,907	99,290	I. 74,383
Totals	£2,033,545	£1,960,910	D. £72,735

Arrivals for the week, this year, were £142,000 in bar silver from New York, and £4,000 from Chile; total, £146,000. Shipments were £158,000 in bar silver to Bombay, £10,000 to Calcutta, and £6,000 to Malta; total, £174,000.

Indian exchange continues steady at 15.97d. per rupee, but the demand for Council bills in London has been very light. The Indian Government has again been buying silver in London, and a considerable quantity of silver has been shipped to India by private parties.

Shipments of specie from San Francisco in April included $538,401 gold and $700,455 silver. For the four months ending April 30th the shipments are reported as below:

	Gold.	Silver.	Totals.
Hongkong	$27,567	$2,462,302	$2,489,869
Shanghai	.....	552,554	552,554
Samoa	1,180	.....	1,180
Fanning Island	.....	1,000	1,000
Tahiti	.....	4,000	4,000
Central America	8,875	6,450	15,325
Total foreign	$37,622	$3,026.306	$3,063.928
Honolulu	257,000	53,800	328,800
New York	2,521,028	235,220	2 756,248
Totals	$2,833,650	$3,315,326	$6,148,976
Totals, 1899	8,631,138	1,930,468	10,561,606

Included in the silver shipments were $378,462 Mexican dollars in April and $1,767,795 in the four months, against $37,405 and $351,585, respectively, last year. Besides the shipments above there was $1,000 in 5-c. nickel coins sent to Honolulu in April.

Exports of merchandise from the United States continue large, though the April shipments were $15,349,344 less than in March. They amounted to $118,926,507, or $30,131,634 more than in April, 1899. For the 10 months of the fiscal year from July 1st to April 30th the statement of the Bureau of Statistics of the Treasury Department is as follows:

	1899.	1900.
Exports	$1,036,787,628	$1,172,736,685
Imports	565,230,807	717,241,544
Excess, exports	$471,557.021	$455,495.141
Add excess of exports, silver	.....	17,665,292
Total	.....	$473,160,433
Deduct excess of imports, gold	.....	9,216,623
Apparent balance	.....	$463,943.810

The gold and silver movement in detail will be found in the usual place, at the head of this column.

Other Metals.

Daily Prices of Metals in New York.

May.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. Pence.	Copper. Lake. cts. ₱ lb.	Copper. Electrolytic ₱ lb.	Copper. London. £ ₱ ton	Tin, cts. ₱ lb.	Lead cts. ₱ lb.	Spelter. N.Y. cts. ₱ lb.	Spelter. St. L. cts. ₱ lb.
12	4.88	60	27 1/16	16⅝ @16¾	16⅜ @16½	.....	28¾	4.15 @4.20	4.55	4.45
14	4.88	60	27 1/16	16⅝	16⅜	73¾	28½	3.95 @4	4.50 @4.55	4.40
15	4.88	60	27 1/16	16½	16¼ @16⅜	73	28½	3.95 @4	4.50 @4.55	4.40
16	4.88	59⅞	27½	16½	16¼ @16⅜	73	29¼	3.95 @4	4.55	4.40
17	4.88	60	27 1/16	16½	16¼ @16⅜	73¾	28⅝	3.95 @4	4.55	4.40 @4.45
18	4.88	60	27 1/16	16½	16¼ @16⅜	73¼	28⅝	3.95 @4	4.55	4.45

London quotations are per long ton (2,240 lbs.) standard copper, which is now the equivalent of the former g. m. b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market remains dull and quiet. Manufacturers appear covered for early deliveries and in the absence of buying, prices have this week again receded. We quote Lake at 16½c.; electrolytic in cakes, wirebars and ingots, at 16¼ @16⅜c. in cathodes at 16@16⅛c.; casting copper at 16¼c.

The London market, which closed last week at £74 15s. for spot, £74 5s. for three months, opened £1 lower. On Wednesday it was £73 for spot, £72 12s. 6d. for three months. On Thursday it advanced to £73 15s. for spot, £73 5s. for three months, and closes at £73 5s. for spot, and 7s. 6d. lower for three months.

Statistics for the first half of May show a decrease in the visible supplies of 400 tons. Refined and manufactured sorts we quote: English tough, £77 10s.@£78. 10s.; best selected, £78 10s. @£79 10s.; strong sheets, £86@£86 10s.; India sheets, £83@£83 10s.; yellow metal, 7⅛d.

Copper production, as reported by Mr. John Stanton, who acts as statistician for the producing companies, was as follows for April and the four months ending April 30th, stated in long tons (2,240 lbs.), of fine copper:

	—April.— 1899	1900.	—4 months— 1899.	1900.
U. S , reporting mines	17,854	20,657	72,445	75,360
U. S., outside sources	2,100	3,400	7,950	13,600
Total, U. S	19,954	24,067	80,395	89,260
Foreign, reporting mines	7,911	7,352	29,239	28,905
Totals	27,865	31,419	109,634	117,265
Exports, U. S	7,423	12,764	39,832	59,646

The April production in the United States this year was greater than that of March by 784 tons, while it shows an increase of 4,013 tons over April, 1899. For the four months the total increase over last year was 8,865 tons, of which 3,215 tons was from the reporting mines and 5,650 tons from the outside sources. The exports this year were 66.8% of the United States production, and show an increase of 19,814 tons, or 49.6%, over last year.

Tin.—The market here has been very quiet and prices continue to rule below the import parity. Early in the week there was a decided pressure to sell, and as low as 28½c. was done. About the middle of the week, however, the improvement in London prices made itself felt here and business was done at 29¼c. At the close we quote 28⅞c.

The advance in London is ascribed to the smaller shipments cabled for the first half of this month, but we are informed by cable that the total shipments for May are hardly expected to be less than they were last month. The London market, which closed last week at £133 for spot, £132 15s. for three months, declined £2 after the opening on Monday, but reacted to £132 2s. 6d. for spot, £131 10s. for three months. On Tuesday it was £131 10s. for spot, £130 10s. for three months, but on Wednesday and Thursday the market rose steadily, on the latter day the quotations being £135 15s. for spot, £134 10s. for three months, and it closes at £134 5s. for spot to £133 10s. for three months.

Lead.—A further reduction in the price has been made by the American Smelting & Refining Company, and we now quote New York 3.95 @4c., St. Louis 3.80@3.85c. The price of this article has thus declined $14 per ton in less than two weeks. Different reasons have been given as the cause of this rapid decline, but we believe the fact that production is in excess of consumption in a great measure explains the movement.

Our cables from abroad report good business doing. The scarcity of spot lead has been somewhat relieved. Spanish lead is quoted at £16 15s.@£16 16s., 3d. English lead at 2s. 6d. higher.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is dull at the decline; argentiferous, 3.95c., and Missouri brands, 3.85c., nominally. Trading is very light.

Spanish Lead Market.—Messrs. Barrington & Holt write, under date of Cartagena, Spain, May 1st: For the past month the average price of lead has been 89.87½ reales per quintal, equivalent to a price of £15 8s. 4½d. per ton of 2,240 lbs. f. o. b. Cartagena, on an average exchange of 32.65½ pesetas to £1. The average price of silver has been 14.12½ reales per ounce. The total export of pig lead from the province of Murcia in 1899 was 62,702 tons. The export of pig lead during April has been 1,652,907 kgs. to Marseilles; 1,089,336 kgs. to Newcastle; 953,448 kgs. to London; 101,186 kgs. to Antwerp; total, 3,796,877 kgs.

Spelter.—A fair business is reported at last prices, 4.55c. New York, 4.40@4.45c. St. Louis.

The European market has declined somewhat, good ordinaries being quoted at £21 2s. 6d., specials 5s. higher.

Messrs. Barrington & Holt report shipments of zinc ore from Cartagena, Spain, in April, as follows: 300,000 kgs. blende to Bristol; 300,000 kgs. blende to Antwerp; 600,000 kgs. calamine to Antwerp; 300,000 kgs. calamine to Hamburg; total 1,500,000 kgs.

Antimony.—We quote Cookson's 10½, Hallett's 9⅝, U. S. Star 9½@9⅝c.

Nickel.—The price of this article continues 45@50c., according to size of order.

Platinum.—Consumption has increased and prices are higher. For ingot platinum in large quantities $18.20 per Troy oz. is quoted in New York.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 70½c. per gram.

Quicksilver.—The New York quotation is unchanged at $51 per flask for large lots; for small orders $52.50@$54 is asked. San Francisco quotations are $51.50 for local deliveries, and $46.50@$47 for export.

The London price is £9 10s. per flask, with the same figure quoted from second hands.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as below:

Aluminum.	Per lb.		Per lb.
No. 1, 99% ingots	33@37c.	Ferro Titanium (20%)	$1.00
No. 2, 90% ingots	31@34c.	Ferro-Tungsten (37½)	35 c.
Rolled sheets	42c. up	Magnesium	$2.75@$3
Alum.-bronze	20@23c.	Manganese (over 99%)	$1.05
Nickel-alum	33@39c.	Mangan'e Cop. (2 % Mn)	32c.
Bismuth	$1.60	Mangan'e Cop. (3% Mn)	38c.
Chromium (over 99%)	1.00	Molybdenum (Best)	$1.45
Copper, red oxide	60c.	Phosphorus	45@50c.
Ferro-Molyb'um (50%)	$1.05	Tungsten (Best)	95c.
Ferro-Titanium (10%)	90c.		

Variations in price depend chiefly on the size of the order.

LATE NEWS.

A dispatch from Hallowell, Me., May 17th, says: "The granite manufacturers and cutters here have reached an agreement, and the strike, which began in March, will end at once. The agreement is on the basis of 35c. per hour, minimum price, and an eight-hour day. The piece bill of price is increased about 12%. The contract is to be continuer for two to five years."

The April return of the Montana Mining Company, Limited, of Montana, states that the total output for April was: gold, 2,350 oz.; and silver, 9,940 oz.; obtained from 4,300 tons of ore crushed in the mills, and 8,273 tons of tailings from the dams brought under treatment. The estimated realizable value of the produce of crushings is $20,300; tailings, $31,900; total, $52,200. The working expenses on revenue account were $18,400; outlay on developments, $7,100; extraneous expenses, $900; treatment of 8,273 tons of tailings, $11,504; redemption of cost of tailing plant, $2,396; total ,$40,800; leaving an estimated net profit of $11,400. The 60-stamp mill was in operation for 27 days.

A dispatch from Butte, Montana, May 17th, says:

"Two decisions of importance in the litigation between the Amalgamated Copper interests ond F. A. Heinze were handed down yesterday. Judge Clancy, of the District Court, has granted Heinze's motion for the appointment of a receiver for the Nipper Mine. In this suit Mr. Heinze charged that Marcus Daly, H. H. Rogers, William Rockefeller and others had entered into a conspiracy to prevent him from operating the mines in Butte. The Anaconda owned 5/36 of the Nipper Mine, the other 31/36 being owned by Heinze. Daly, representing the Anaconda company, entered into an agreement with Heinze to sell him these 5/36 on a basis of $150,000 for the whole mine. Heinze then went ahead with his development work, and spent a large sum in opening up the Nipper. When this became known the Anaconda people promptly repudiated the agreement with Heinze.

"Recently when the Supreme Court dismissed the injunction, which the Pennsylvania Mine belonging to the Boston & Montana, had obtained against Heinze's Rarus Mine, the Amalgamated people applied to Judge Lindsay for a fresh injunction against the Rarus. Judge Lindsay has now decided that he has no power to grant such an injunction. This practically ends the Pennsylvania-Rarus suit in Heinze's favor."

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 610.)

New York. May 18.

Heavy Chemicals.—Deliveries are principally on contract, and for future orders first hands quote as below. Second hands satisfy the small buyers for prompt deliveries at a slight advance in prices, but this trade is unimportant. We quote per 100 lbs., as below:

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York.	In New York.
Alkali. 58%.	80@85	95@$1.00	85@90
" 48%.	85@90	$1.00@$1.05	1.02½@1.05
Caustic Soda, high test....	$1.85@$1.90	2.25@2.30	$2.50@2.60
powd. 60%	....	3.00@3.25	....
70@74%.	....	3.25@3.50	....
98%.	....	3 50@4.00	3.75@4.00
Sal Soda	70@80.	....	67½@72½
" conc.	1.45@1.75	....	1.60@1.65
Bicarb Soda..	1.25@1.37½	.....	1.75@2.00
" " extra	3.25@3.50	.....	.....
Bleach Pdr., Eng. prime..	.....	....	175@1.87½
other br'nds.	....	....	1.50@1.75
Chl. Pot cryst	....	9.50@9.75	10.00@10.25
" powd.	....	9.75@10.00	10.25@10.50

Acids.—No change, other than sulphuric acid is moving more freely on contract, owing to the warmer weather.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, No 8 in lbs.	$1.62½	Nitric, 36°	$3.87½
Blue Vitriol,	5.25@5.50	Nitric, 38°	4.12½
Aqua Fortis, 38°	3 62½	Nitric, 40°	4.37
Aqua Fortis, 38°	3 87½	Nitric, 42°	4.75d
Aqua Fortis, 40°	4.12½	Oxalic	5.85@6.00
Aqua Fortis, 42°	4.50	Sulphuric, 66°	1.20
Muriatic, 18°.	1.20	Sulphuric, 60°	1.05
Muriatic, 20°.	1.35	" bulk 50° ton	14.00
Muriatic, 22°	1.50		

Brimstone.—New York imports this week amount to 1,000 tons. Market featureless. Spot best unmixed seconds are nominal at $21.25@$21.50 per ton, and shipments, $21@$21.25. Best thirds are about $2 less per ton.

Pyrites.—The Pennsylvania Salt Manufacturing Company imported at New York this week 3,535 metric tons copper pyrites from Spain. We note a charter of 1,924 tons from Huelva, Spain, to New York at 12s. Demand is good, and prices are steady.

We quote: Mineral City, Va., lump ore, $4.75 per long ton (basis 42%), and fines, $4.20. Charlemont, Mass., lump, $5.50, and fines, $5. Spanish pyrites, 13@15c. per unit, according to percentage of sulphur contents, delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46%@51% of sulphur; American, 42%@44%.

Fertilizing Chemicals.—Quiet. The total shipments of fertilizers from Charleston, S. C., from September 1st, 1899, to March 31st, 1900, amounted to 344,274 tons, showing an increase of 69,815 tons as compared with the same time in 1898-99. Foreign gas sulphate of ammonia to arrive is worth $2.85 per 100 lbs., and on spot 2.87½@$2.90, and domestic $2.85, f. o. b. Everett, Mass. Other quotations are: High grade Western blood, $2 per unit, f. o. b. Chicago; New York dried blood, high grade, $2.35; high grade tankage, $1.90 and 10 per unit, f. o. b. Chicago; fish scrap, dried, $21@$21.50 per ton, f. o. b. factory; domestic ground bone, $21@$23 per ton; Calcutta bone meal, No. 2, $25 per ton, and No. 3, $23; bone black, spent, $15@$16 per ton.

The prices for potash salts at New York, Boston and Philadelphia, per 100 lbs., are as follows: Muriate of potash, 80@85%, basis 80%, $1.83; muriate of potash, minimum 95%, basis 80%, $1.86; sulphate of potash, minimum 90%, basis 90%, $2.05½; sulphate of potash, minimum 96%, basis 90%, $2.08½; manure salt, minimum 20% potash, 64@66c.; double manure salt, 48@53%, basis 48%, $1.06; kainit, 12.4% potash, $9.05@$9.30 per long ton; and sylvinit, 38½@39½c. per unit. For Norfolk prices add 2c. per 100 lbs. to the concentrated salts, except double manure salt, to which add 1c., and for kainit add 30c per ton, and sylvinit 1c. per unit. For Charleston, Savannah, Wilmington, N. C., and New Orleans add 1½c. per 100 lbs. to the concentrated salts, except 20% manure salt, to which add 1c.; and to kainit add 20c. per ton, and sylvinit 1c. per unit. These prices are for not less than 500 tons of bulk salts or 50 tons of concentrated salts, and are based upon river shipments from the mines to seaport. For shipments by rail add 5c. per 100 lbs.

Nitrate of Soda.—Sales on spot were made at $1.75 per 100 lbs., and futures were quoted as low as $1.72½. Below we give the monthly average prices of spot nitrate of soda in New York per 100 lbs., as quoted by importers, comparison being made with last year:

	1899.	1900.
January	$1.50	$1.87
February	1 64	1 96
March	1.62	2.18
April	1 66	2.04
Average 4 months	$1.63	$2.01

This year the price increased 38c. per 100 lbs. Corresponding higher prices were obtained by second hands.

The monthly statistical position of nitrate of soda in Europe, this year, in long tons, is as below:

	Exports to	Imports.	Deliveries.	Vis. Supply on 1st.
January	75,792	142,570	92,120	713,710
February	92,302	106,300	174,530	726,680
March	73,932	86,270	203,820	648,050
April	47,035	151,830	171,450	513,900
May	.....	.....	....	386,350
Total, tons..	289,061	486,970	641,920	

As compared with the corresponding four months last year the imports show a decrease of 90,910 tons; the deliveries, 21,930 tons, and the visible supply on May 1st, 4,810 tons less. It is noteworthy that the visible supply in Europe since February 1st, 1900, has been steadily falling off, and on May 1st it is 340,330 tons less than February 1st.

Concerning the trade in nitrate of soda on the West Coast of South America we are advised by Messrs. Jackson Brothers, Valparaiso, Chile, under date of April 7th, that business has been greatly reduced owing to the scarcity of tonnage. Sales of 95% for prompt delivery have been made at 4s. 11¼d.@5s. ½d. per qtl. alongside, prices varying according to port of delivery. Refined quality sold at 5s 3d. alongside for early deliveries, and recently a large business has been done for the early months of 1901 at 5s 5½d. alongside. The estimated exports in March amount to 2,031,000 qtls., making a total for the three months of 6,635,000 qtls. (300,900 long tons), against 6,532,882 qtls. (296,313 tons), in the same time last year. Reported sales from March 7th to April 5th amount to 805,000 qtls (36,512 long tons). We quote 95% prompt, 4s. 11d.; May, 4s. 11½d.; May-June, 5s ½d.; June-July, 5s 1½d.; July-August, 5s. 2½d.; August, 5s. 3d.; September-December, 5s. 3½d. all ordinary terms. The price of 4s. 11d. with all round freight of 33s. 9d. stands in 7s. 1¾d. per cwt., net cost and freight without purchasing commission.

Phosphates.—Talk of consolidating some of the hard rock plants in Florida has tended to stiffen prices, but they are as yet unchanged.

The shipment of Florida phosphates in the four months ending April 30th are compiled by us as below, comparison being made with the corresponding period last year:

	1899		1900	
Port.	Rock.	Pebble.	Rock.	Pebble.
Fernandina	88,783	.....	68,020	.....
Savannah	28,016	.....	47,859	.....
Tampa	24,010	51,633	11,977	40,736
Brunswick	22,553	.....	1,719	.....
Punta Gorda	.....	20,672	.....	6,445
Total, tons	163,362	72,305	129,584	47,180

The rock shipments show a decrease of 33,778 tons, and the pebble 25,024 tons in 1900. All the phosphate rock this year was exported, and as compared with the same four months in 1899 they show a falling off of 32,861 tons.

In Tennessee contract deliveries so far have been filled principally with rock that was mined in 1899, owing to the inclemency of the weather, which has interfered with fresh mining. Stocks are well cleaned up, and it is understood prices are satisfactory to the miners. The exports from Pensacola in April amounted to 6,018 tons, making a total of 39,334 tons in the four months of this year, as against 23,336 tons last year, showing an increase of 15,998 tons.

South Carolina phosphates are quiet.

On export account we note the following charters: 1,497 tons from Tampa to Stettin at 22s. 6d., sailing June 25th; 1,321 tons from Fernandina or Savannah to Rotterdam, at 18s., June 30th; 1,133 tons from Fernandina to the United Kingdom or continent at private terms; and 1,803 tons from Pensacola to Dunkirk at private terms.

Concerning the exports of American phosphates to Japan in 1899 we learn that 15,655 tons were sent to Yokohama from Port Royal and Tampa, and 5,800 tons to Kobe from Pensacola, making a total of 21,455 tons. These phosphates were consigned to the China & Japan Trading Company, Limited, at Kobe, and to Mitsui Bussan Kaisha, at Yokohama.

Ocean freight rates from Florida ports are about as follows: To Baltic ports, $5.04@$5.28 per ton; Continental, $4.56@$4.68; Mediterranean, $4.89@$5.01, and United Kingdom ports, $4.44@$4.56.

We quote as follows:

Phosphates.	Per Ton F. o. b.	C. i. f. Un'd Kingdom or No Sea Ports. Unit.	Long ton.
*Fla. hard rock (77@80%)	$8.00@8 50	8¼@8⅝d	$12.87@13.06
*Fla. land pebble (68@73%)	4 35	7d	9 80
*Fla. Peace River (58@63%)	3.00@3 50	6½@6⅝d	7.80@7 95
†Tenn. rock 78%, export.	4.00@4 25	7⅛@7¼d	11.15@11.31
†Tenn. 78% domestic.	3 50	.....	.....
†Tenn. 75% "	3.00@3.25	.....	.....
†Tenn. 72% "	2.65@2.75	.....	.....
‡So. Car. rock, undried.	3 75@4.00	.....	.....
‡So. Car. rock, dried....	4.50@4.75	.....	.....
‡So. Car. rock, ground ..	6.00	.....	.....
Algerian, rock...(63@70%)	.....	7d	9.30
Algerian, rock...(58@63%)	....	6¾d	8.18

*Fernandina. †Mt. Pleasant. ‡Fetteressa.

Liverpool. May 9.

(Special Report of Joseph P. Brunner & Co.)

The market for heavy chemicals continues quiet as far as fresh business is concerned, but manufacturers keep fairly busy with contract deliveries.

The shipments of bleaching powder and alkali for the month ending April 30th last, taken from the Board of Trade returns, are as follows: Total exports to all quarters, including United States, of alkali, cwts., 332,021; bleaching powder, cwts., 112,053; exports to United States alone, alkali, cwts., 77,896; bleaching powder, cwts., 84,879.

As compared with the corresponding month of 1899 the exports of alkali show an improvement, while bleaching powder has slightly decreased. Taking into account the very heavy exports of bleach for the first three months of this year it is not surprising that the quantity is now falling off somewhat.

Soda ash is in fair request at the usual varying prices according to export market. We quote spot range for tierces about as follows: Leblanc ash, 48%, £4 15s.@£5; 58%, £5 5s.@£5 10s. per ton net cash; ammonia ash, 48%, £4 5s.@£4 10s.; 58%, £4 10s.@£4 15s. per ton net cash, bags are 5s. per ton under prices for tierces. Soda crystal ash, firm for most markets, £3 2s. 6d. per ton, less 5%, being quoted for barrels, or 7s. less for bags, with special terms for a few favored quarters. Caustic soda is well maintained in price and high strength is very scarce. We quote spot range as follows: 60%, £9 5s; 70%, £10 5s.; 74%, £10 15s.; 76%, £11@£11 10s. per ton net cash. Bleaching powder is neglected and nearest value for hardwood is about £6 15s.@£7 per ton net cash, but there is very little fresh business passing. Chlorate of potash is in light demand at 4¼@4½d. per lb. net cash, makers holding for the higher figure. Bicarb soda is unchanged, quotations varying according to destination from £5 5s.@£6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is rather idle, but values are nominally unchanged at about £11 12s. 6d. @£11 15s. per ton, less 2½% for good gray 25@24% in double bags f. o. b. here.

Nitrate of soda is selling to a fair extent for home consumption, but there is little doing for export, and £8 10s.@£8 15s. per ton, less 2½% represents nearest spot value for double bags f. o. b. here, according to quality and quantity.

MINING STOCKS.

Complete quotations will be found on pages 607 and 608 of mining stocks listed and dealt in at:

Boston. Colo. Springs. Denver. New York. Philadelphia. Spokane. Salt Lake. San Francisco. Toronto. Montreal. London. Mexico. Paris.

New York. May 18.

A recovery in prices was noted early in the week, but at the close the market is again weak. Thus Amalgamated after selling up to $87½ fell to $86¼ on Wednesday. Anaconda declined from $44 to $41. British Columbia was lowered on sales from $11⅛ to $10¾, and Union of North Carolina from $6 to $5. Sales of Tennessee are reported at $13¾@$14½. American Smelting and Refining shares are weaker. The common stock fell from $38⅝ to $37½, and the preferred from $89 to $87½, but at the close they show some recovery. Alice of Montana is up 10c. at 60c., and Deadwood Terra of South Dakota sold at 65c. Horn Silver of Utah brought $1.30, and Ontario $8.50.

In the Colorado section Elkton gained 5c. at $1.35. Isabella sold at $1.25. Jack Pot is lower at 66@67. Work sold at 34c.; Mollie Gibson at 24c.; Creede & Cripple Creek, 14c.; Alamo, 14c.; Pharmacist, 14½@14c.; Little Chief, 18@20c.; Iron Silver, 67@69c.; Specimen, 12c.; and Leadville at 6c.

Brunswick of California is steady at 28c., and Syndicate at 10c.

Comstock Tunnel stock shows large trading at 3c. Consolidated California & Virginia brought $1.45@$1.50; Ophir, 70@60c.; Mexican, 34@32c.; Sierra Nevada, 35c.; Best & Belcher, 30c.; and Gould & Curry, 23c.

The New York Stock Exchange at its recent annual meeting elected Rudolph Keppler, president; J. T. Atterbury, vice-president; William McClure, secretary; F. W. Gilley, treasurer, and McPherson Kennedy, chairman. For the Governing Committee, to serve four years, the following were elected: A. M. Cahoone, Daniel Chauncey, F. C. De Veau, R. P. Doremus, George W. Ely, A. E. Goodhart, C. W. Maury, H. K. Pomroy and A. Wolff, Jr.; to serve three years, William H. Hollister; to serve one year, James B. Mabow. Trustee of the Graturity Fund, to serve five years, S. H. Kissam. Nominating Committee for 1901: R. H. Bissell, T. C. Buck, F. M. Thierlot, S. A. Walsh, and R. B. Whittemore.

Boston. May 17.

(From Our Special Correspondent.)

It has been a bear week for the most part, and the market has shown a general depression. In mining stocks the earlier part of the week

was dull, and while business improved later it was at the expense of prices. It is inside trading mainly, and the public does not appear unless there is a chance to unload on an upward turn.

In the dividend paying coppers dealings were light and prices generally weak. Calumet & Hecla sold down to $745, recovering later to $747. Tamarack was quoted at $175 on a few shares; while Osceola brought $61½, Wolverine $38 and Atlantic $23.

In the miscellaneous coppers the closing quotations to-day showed $19 for Baltic, $16 for Centennial, $16 for Old Dominion, $13½ for Mohawk and $2 for Victola.

The blind pool group was weak all through. Boston & Montana sold down to $276, but closed at $283; Amalgamated brought $86½; Butte & Boston, $61; Anaconda, $41½; Parrot, $39½; Utah, $25½, and Arcadian, $16½.

In the gold stocks Centennial-Eureka was quoted at $23½, Cochiti at $10 and Gold Dredging at $2½, with only moderate transactions.

In the general list there was more or less weakness, and a special attack was made on Dominion Coal, which in turn rallied a little at the close. New England Gas and Coke sold down to $14, closing at $15. United States Oil brought $16, Central Oil $13½ and Montana Coal and Coke $7½.

Opposition is developing to the proposed reorganization of the Pioneer Gold Mining Company. Mr. Joseph M. Cox, formerly vice-president of the company, now heads the movement.

Charles H. Cole got his sentence this week—8 years in Greenfield jail for his share in the Globe Bank business. A good many people think that this is an unsatisfactory ending. It is freely said that a trial would have brought out some things that would have been very unpleasant to certain people of standing; and so Cole was induced to carry the load and plead guilty. Very probably there is an understanding behind that when the matter has blown over and people have had time to forget, pressure will be exerted for a pardon. The president, as is well known, has shown himself very lenient in the case of bank wreckers, and would doubtless listen sympathetically to a word from his Boston friends.

Salt Lake City.

(From Our Special Correspondent.)

Softness is the feature of the Utah mining share market. It has been a buyers' market for the 6 days last past. The cut in lead at New York has influenced conditions and given opportunity for wild and wide comment. Matters are not as bad as some paint them, and lead will have to take several more drops before there will be cause for alarm among the lead-silver dividend payers. Reported sales on the Exchange for the week were 68,175 shares, which sold for $25,225.

Ajax holds its recent advance. Centennial-Eureka remains firm $22.50 bid, $25 asked. The weakness of the Boston market influences these shares. Daly is lower, owing to unlooked for delay in announcing resumption of active mining. Daly-West was firm, and closes at $17.36 bid, $17.80 asked; ex-dividend payable on the 15th. Grand Central is softer; at the directors' meeting Wednesday nothing was said of a dividend this month. Mercur is quiet and a shade weaker. Silver King reflects the lead cut and is an offering at $51; on Thursday it paid the customary $75,000 dividend. Sunbeam may be had in large lots for the last assessment of 10c. Valeo's spurt of last week was too rapid and it has lost a good part of its gain.

San Francisco. May 12.

(From Our Special Correspondent.)

There is nothing especially new in the stock market beyond the reports of the lowering of water, the usual bulletins from the electric power people and some talk of blocking out low grade ores. Stocks on the whole were rather weaker and lower.

Business outside of the Comstocks was confined to Standard Consolidated, which was quoted at $4.25; later $4.50 was asked, with no sales.

Business on the Producers' Oil Exchange has been good. The stocks of the producing companies are held at a high figure. Some quotations noted are: Blue Goose, $15; National Oil, $6.25; Home Oil, $4.50; Yukon, $1.15; Petroleum Center, 30c. Prospects are considered very favorable.

London. May 5.

(From Our Special Correspondent.)

The South African mining market has shown rather more life this week, chiefly because Lord Roberts' army has once more got on the move. The amount of business, however, is really very small, and the variations in quotations have been trifling. The West Australian market has been very nervous this week, and in spite of the good shows of the Horseshoe and Ivanhoe companies, the public are inclined to take a serious view of the future of the leading producers at Kalgoorlie. No authoritative information has come to hand as regards the future prospects of the treatment of the refractory sulphides and low grade ores, and the continual shuffling of managers and their divergent opinions are not conducive to confidence or stability. The main source of disquietude is in connection with Lake View Consols. This company in its palmy days used to produce 30,000 oz. of gold a month, but recently, owing to the exhaustion of the rich ore, the production fell to 12,000 oz. a month. Now it is anticipated that the yield for April will not be more than 8,000 oz. This company, as I have before mentioned, is experimenting with the bromo-cyanogen process as adopted by Dr. Diehl, and the directors contemplate that it will be in operation in the autumn. We have had, however, no reliable information as to its efficiency, so that there is little material available for judging of the future of this property.

The only other section of the mining market that has shown any sign of existence is the copper stocks. There seems to be an end at present to the buyers of shares in copper mining companies, and the quotations of all the shares have declined. The copper market itself is not so strong, as the visible supplies have increased and the price of copper has receded, so no doubt a great many holders of copper shares consider it advisable to sell out at the present high quotations. I also understand that there is a heavy bull account in Paris, and no doubt the forced realization of many of such holdings will tend to weaken the price of some of the shares.

Just two years ago the Newfoundland Copper Company, Limited, was floated in London to acquire and work a variety of properties in that colony. It was promoted by a group who have many interests in copper and gold companies in various parts of the world and who are generally advised by Mr. J. H. Collins. Their operations are always in the direction of legitimate mining, but they often suffer from want of capital, and I have before now suggested that it might be more to their interest to concentrate their energies and their capital, instead of spreading them over so many enterprises. The present case, the Newfoundland Company, has not answered the expectations of the prospectus. Out of all the properties acquired, only the Sleepy Hollow has proved a producer, and in order to win the ore the expense entailed has been considerable. The company also has not sufficient capital on hand to complete the option, which required a cash payment of £15,000. The directors have also discovered many other disadvantages in connection with the property. It is therefore proposed to acquire a new copper mine, this time in Chile, situated near some properties already worked by the same group of promoters. These properties are spoken of in glowing terms, but their exact locality is not mentioned. Shareholders can therefore only hope for the best.

Paris. May 6.

(From Our Special Correspondent.)

The mining stock market has been comparativey quiet, and the business has been smaller than for some weeks past. The South African gold stocks are entirely stagnant, every one appearing to wait for further news from the Transvaal.

London, which has been a persistent speculator for the fall in Rio Tintos, is doing its best to break down the price of that stock. In Paris the speculation has been for the rise, and the commitments are very large. It is rather an interesting duel, and I am inclined to think that London will be the defeated party, in spite of present reaction in the stock.

The zinc and lead shares have been somewhat more active. The report of the Vieille Montagno Company for 1899 shows the largest amount of profit ever made by the company in one year. The dividend declared is 45f. per share, an increase of 9f. over the previous year.

The French law of April 21st, 1810, regulating the institution of mine concessions, provided that a royalty might be given gratuitously to a concessionnaire chosen by the Government on the recommendation of the General Mining Council and Council of State; and the mine thus granted became the property of the concessionnaire, subject only to right of the Government to intervene in the technical management of the working, in order to insure preservation of the mine and prevent danger to the surface and the men employed. The concessionnaire is bound to work his mine actively in the absence of legitimate reasons to the contrary, while he can only unite his concessions to others of the same nature by Government authorization. For a long time past, however, this method of granting concessions has been criticised. Bills brought in for modifying this régime in 1877, 1886 and 1894 failed to pass. Quite recently, on the proposition of the Council of State, the Government only instituted a new series of iron mine concessions in Meurtheet-Mosselle on condition that the concessionnaires should contribute to making the railways necessary for working the mines; and a new bill on this subject was brought in on March 23d by the Minister of Public Works, which proposes to substitute for gratuity of concession a public letting of the royalties. As, however, it is advantageous for the nation to have at disposal as many actively worked mines as possible, and as experience has shown that the most certain means for insuring fresh discoveries being made is to confer a mine upon its finder, a preferential right is reserved to the latter, subject merely to payment to the State of the sum fixed for granting the concession or determined by its results.

Every one looked forward to the opening of the Exposition as the date for activity in business, and a revival in prices. Thus far, however, there has been much disappointment. Prices have declined, speculation has fallen off, and very few visitors from abroad have arrived. Probably their coming is postponed until later, as the accounts published of the condition of affairs here are not encouraging. Parisians, indeed, do not go to the grounds yet, for there is very little to be seen, and the affairs there are discouraging.

I do not believe—and I never have believed—in these great expositions. In the long run I believe they are more hurtful than beneficial to business.

Azote.

ANNUAL MEETINGS.

Name of Co.	Locat'n.	Date.	Place of Meeting.
Alamo	Utah	May 21	Salt Lake City, Utah
Amalg'm'tdC'p'r	Mont	June 4	52 Broadway, N. Y.
Am. Steel Hoop		May 28	East Orange, N. J.
American Boy	Wash	June 25	Spokane, Wash.
Bunker H. & Sull	Idaho	June 17	San Francisco, Cal.
Cochiti	N. Mex	June 4	Jersey City, N. J.
Crown Point	Nev	June 7	San Francisco, Cal.
Dominion Coal	N.Sc'tia	June 1	Boston, Mass.
*Elkton Con	Colo	June 4	Colo. Springs, Colo.
*Golden Star	Utah	May 24	Salt Lake City, Utah.
Goleta	Cal	May 19	San Francisco, Cal.
National Con	Cal	June 6	San Francisco, Cal.
*Pioneer	Cal	May 31	Helena, Mont.
Quicksilver	Cal	June 19	20 Nassau St., N. Y.
Quincy	Mich	June 7	45 Broadway, N. Y.
*Raven	Colo	June 4	Colo. Springs, Colo.
Tornado	Colo	June 4	Colo. Springs, Colo.

*Special meeting.

DIVIDENDS.

Name of Company.	Latest Dividend. Date	Per share.	Total.	Total to date.
Amanda Con. Colo	June 1	.01	10,000	10,000
Am. Iron & Steel	May 31	.50		
*Argonaut, Cal.	May 26	.05	10,000	490,000
†Bethlehem Steel	June 1	.50	150,000	
†Boston—Aurora, pf.	May 25	.50	16,000	37,120
Boston & Montana	May 29	10.00	1,500,000	17,200,000
*Buffalo Hump. Ida.	June 1	.10	25,000	125,000
*Com'nwealth Zinc, pf	June 1	.05	5,000	50,000
*Croesus, Cal.	June 1	.06	11,400	94,700
*Gold Coin, Victor	May 25	.02	20,000	460,000
*Golden Cycle, Colo.	May 18	.05	10,000	308,500
*Grass Vall. Expl., Cal	May 20	.25	7,500	67,500
*Holy Terror, S. Dak.	May 18	.01	5,000	192,000
*Homestake, S. Dak.	May 25	.50	105,000	8,668,750
*International Zn.	June 1	.01½		
Lehigh Coal & Nav.	May 28	2.50		
*Modoc, Colo	May 15	.01	5,000	170,000
*Mont. Ore Purch.	May 21	1.00	80,000	1,520,000
†National Salt, com.	Aug. 1	1.50		
†Nat'l Tube, com.	Aug. 15	1.50		
†Nat'l Tube, pf.	July 2	1.75		
Omega, Colo	June 10	.01½	18,188	18,188
†Park Steel, pf.	June 1	1.75		
*Penna. Con., Cal.	May 25	.10	5,150	161,325
*Portland, Colo	May 15	.02	60,000	2,887,080
†Pressed Steel Car, pf.	May 28	1.50	187,500	
" " com.	May 21	1.50	187,500	
*Smuggler, Colo	May 15	.03	30,000	1,485,000
Standard Con. Cal.	May 21	.10	20,000	3,939,226
Standard Oil	June 15	10.00		
†U.S. Cast I.P. & F., pf.	June 1	1.75		
*Yellow Aster, Cal.	May 10	.20	20,000	423,759

* Monthly. † Quarterly.

ASSESSMENTS.

Name of Company.	Location.	No	Delinq.	Sale.	Amt.
Alpha Con	Nev.	23	May 24	June 14	.03
Belcher	Nev.	64	May 29	June 19	.15
Ben Butler	Utah	4	June 14	July 2	.00¼
Best & Belcher	Nev.	70	May 11	May 31	.15
Kutonia	Utah	1	May 4	May 24	.01
Goleta Con	Cal.	1	May 30	June 27	.06
Grape Vine Canyon	Cal.	2	May 8	May 29	.07
Independent	N'me	1	May 3	May 21	.10
Jenny Lind	Cal.		May 31		.01
Joe Bowers Ext.	Utah	7	May 21	June 8	.10
Justice	Nev.		May 29		.05
Lion Con	Utah	3	June 2	June 20	.00½
Lucky Bill	Utah		Apr. 30	May 21	.02
Marina Marsicano	Cal.	23	May 7	May 28	.02
Mariposa Com'l	Cal.	16	May 10	June 5	10.00
Maxfield	Utah	7	Apr. 30	May 28	.09
May Day	Cal.		June 10		.10
Ophir	Nev.	78	June 6	June 26	.20
Osceola Con	Cal.	9	Apr. 28	May 21	.01
Picnic	Utah	1	June 9	June 30	.01
Reward	Cal		May 12		.02
Savage	Nev.	100	May 8	May 28	.10
Silver Park	Utah	2	May 7	May 26	.02
Siskiyou Con. q	Cal.		May 22		.03
Snow Flake	Utah		Mar. 1	May 31	.05
Tetro	Utah	12	Apr. 28	May 19	.01
Utah Con	Nev.	33	June 7	June 28	.05
Victor	Utah		June 6	June 26	.03
West Morning Glory	Utah	4	May 17	June 7	.00¼

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY	Location.	Par val.	May 11. H.	May 11. L.	May 12. H.	May 12. L.	May 14 H.	May 14 L.	May 15. H.	May 15. L.	May 16. H.	May 16. L.	May 17. H.	May 17. L.	Sales
Alamo	Colo..	1	.14	....	....	....	....	....	.60	....	.14	....	.18¼	....	1,070
Alice, g. s..	Mont.	25	....	....	....	....	....	....	.75	....	....	....	....	....	300
Amalgamated C	"	100	88.00	87.25	87.25	87.00	86.75	....	87.25	86.75	87.00	86.50	87.50	87.25	2,700
*Anaconda, c.	"	25	44.00	....	43.00	42 25	42 25	41.75	41.75	....	41.50	41.00	43.25	....	5,050
Anaconda Gold	Colo..	5	....	....	....	....	....	....	....	....	.32	....	....	....	....
Argentum-Jun.	"	2	....	....	....	....	....	....	....	....	.19	....	....	....	....
Ariz. Lead	Ariz..	25	16.25	15.75	....	....	....	....	....	....	16.25	15.75	15.50	....	300
Best & Belcher	Nev..	3	....	....	....	....	.30	....	....	....	....	....	....	....	300
Brit.Col.Copper	B. C..	1	11.50	10.75	11.50	10 75	11 50	10 75	11 50	10.75	11.50	10.75	11.00	10.30	3 0
Brunswick	Cal..	1	.28	....	....	....	....	....	....	....	.26	....	....	....	200
Cnollar	Nev..	3	....	....	....	....	....	....	....	....	.15	....	.18	....	....
Chrysolite	Colo..	50	....	....	....	....	....	....	....	....	....	....	....	....	....
Comstock T.	Nev..	100	03½	.03	....	....	.03	....	.03	....	.03	....	....	....	19,300
" bonds	"	100	....	....	....	....	....	....	....	....	....	....	....	....	800
Con. Cal. & Va.	"	2½	1 45	....	1 40	....	1.50	....	1.50	....	1.35	....	1.50	....	....
Cripple Cr. Con.	Colo..	3	....	....	....	....	....	....	....	....	....	....	....	....	....
Deadw'd Terra.	S.Dak.	25	....	....	....	....	....	....	....	....	.65	....	....	....	200
Elkton	Colo..	1	....	....	....	....	....	....	1.35	....	....	....	....	....	200
Garfield Con.	Colo..	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Golden Age	"	1	....	....	.04½	....	04½	....	.04½	....	....	....	....	....	2,500
Golden Fleece	"	1	....	....	....	....	....	....	....	....	.28	....	.30	....	....
Gould & Curry	Nev..	3	....	....	....	....	....	....	.23	....	.14	....	.12	....	500
Homestake	S. Dak	100	....	....	....	....	....	....	....	....	50.00	....	55 00	....	....
Horn Silver	Utah..	20	....	....	....	....	....	....	....	....	1.30	....	1.25	....	500
Iron Silver	Colo.	20	....	....	....	....	....	....	....	....	.69	.67	.66	....	1,100
Isabella	"	1	1.25	....	....	....	....	....	1.25	....	1 25	....	1.20	....	500
Jack Pot	"		....	....	....	....	....	....	.66	....	.67	....	....	....	500
King Penub	Ont..	10	....	....	....	....	....	....	....	....	....	....	....	....	....
Lacrosse	Colo..	10	....	....	....	....	....	....	....	....	.14	....	.14	....	....
Leadville	"	10	....	....	.07	....	.06	....	....	....	....	....	.07	.06	800
Little Chief	"	1	.18	.17	....	....	.20	....	.18	....	.18	....	.19	.17	1,200
Mexican	Nev..	3	....	....	....	....	....	....	.34	....	.32	....	.32	....	500
Mollie Gibson	Colo.	5	.24	....	....	....	.24	....	....	....	....	....	....	....	50
Moulton	Mont.	25	.25	....	....	....	....	....	....	....	.25	....	.30	....	50
Ontario	Utah	100	....	....	....	....	....	....	8.50	....	7.75	....	....	....	500
Ophir	Nev..	3	....	....	....	....	.70	....	6	....	.70	....	.59	....	1,000
Pharmacist	Colo	1	.14½	....	.14½	.14	....	....	.14½	....	.14	....	....	....	7,000
Phœnix	Ariz..	1	....	....	....	....	....	....	....	....	.08	....	.08	....	....
Plymouth	Cal..	10	....	....	....	....	....	....	....	....	.10	....	....	....	....
Portland	Colo..	1	....	....	....	....	....	....	....	....	2 65	....	....	....	....
Potosi	Nev..	3	....	....	....	....	....	....	....	....	.15	....	....	....	....
Quicksilver	Cal.	100	....	....	....	....	....	....	....	....	1 50	....	1.50	....	....
do. pref.	"	100	....	....	....	....	....	....	....	....	7.50	....	7.50	....	....
Raven	Colo..	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Savage	Nev..	2½	....	....	....	....	....	....	....	....	.10	....	....	....	....
Sierra Nevada	"	3	....	....	....	....	....	....	....	....	.33	....	....	....	200
Small Hopes	Colo.	20	....	....	.90	....	....	....	....	....	....	....	....	....	200
Specimen	"	1	....	....	....	....	....	....	.12	....	....	....	....	....	1,000
Standard Con.	Cal.	10	....	....	....	....	....	....	....	....	3.50	....	....	....	....
Syndicate	"	1	....	....	....	....	....	....	....	....	.10	....	....	....	500
Tenn Copper	Tenn.	25	14.00	12.50	14.00	12.50	14 50	13.00	14 50	13.00	14.50	13.00	16 00	13.00	100
Tornado	"		....	....	.24	....	....	....	....	....	....	....	....	....	500
Union Con.	Nev..	2½	....	....	....	....	....	....	....	....	.19	....	....	....	....
Work	Colo.	1	.34	....	....	....	.34	....	....	....	....	....	....	....	1,500
Yellow Jacket	Nev..	3	....	....	....	....	....	....	....	....	.12	....	....	....	....

COAL AND INDUSTRIAL STOCKS

Am. Sm. & Ref.	.....	$100	40¾	38	38¾	37¾	38¼	37¾	38¼	37¾	38¼	37¾	37⅝	....	11,748
" " " pf	.....	100	89	....	88¾	....	89	88	87¾	....	89	87¾	88	....	2 977
Am.S.& W Con	.....	100	4 ¾	88	38	37	38¼	35¾	36¾	33¾	35¾	33¾	33	....	117643
" " pf'r'd	.....	100	79¾	78	79¼	78	78	75	76¾	74¾	75¾	75	75¼	....	24,230
Am. Tin Plate	.....	100	26¾	26	25¾	....	2¼	25	25¼	21	23	22¾	23	....	5,532
" " " pf	.....	100	77¾	77	76¾	....	77	75	75	74¾	75	....	75	....	2,805
Col. Fuel & I.	Colo..	100	39	37	37¾	37¼	37¾	36¾	37	35¾	37	35¾	36¾	....	13,170
Col. & H C.& I	" ..	100	16¾	16	16	....	15	15	15	14¾	14¾	....	....	....	4,000
Federal Steel	.....	100	39¼	38¼	39¾	38	38	35¾	37¼	34¾	36¾	34¾	35¾	....	74 417
" " pf	.....	100	69¾	67¾	67	....	67	65¾	67	....	67¾	65	67	....	9,738
Fleming'n C.&C	W.Va.	100	30	23	26¾	22	26¾	22	26¾	22	26¾	27	23	....	....
Int'l Pump	.....		.9¼	18	19¾	18	19¼	18	20	18	26¾	22	....	....	....
National Lead	N. Y	100	20¼	19	....	....	19¼	19	19	19¼	19¼	18¾	19¾	....	4,435
" " pf	.....	100	101	100	100	99⅞	98	97⅞	....	....	98	....	95	....	1,486
National Salt	.....	100	45	43	45	43	45	43	43	42	42	42	40¼	....	....
" " pf	.....	100	74	72	74	71¾	74	71¾	74	72	72	71	70¾	....	....
Nat'l Tube	.....	100	46¼	46	46	45¾	48	45¼	47¾	45¼	47	46¼	46¾	....	14 619
Press. St. Car	Pa..	100	....	....	48	....	46	45¾	45	43¾	44¼	42¾	44	....	4,320
" " " pf.	"	100	77.25	....	....	....	....	....	78	....	78¼	77	78	....	1,95
Republic I. & S.	.....	100	15¾	14¾	15.25	14¾	15¼	14¾	14¾	....	14¾	14¾	14¾	....	2,960
" " pf	.....	100	57¾	56¼	56¾	....	57	....	56¼	55¾	56	55¾	56¼	....	2,428
Sloss-Shef.	.....	100	26	24	25	23	25	23	23¾	2 ¾	23¾	23¼	23¾	....	....
" " pf	Ala..	100	68	64	65	63	65	63	67	64	67	66	64	....	....
Stan.Oil of N J.	"	100	548	544	545	542	545	542	534	532	533	530	532	530	20
Tenn.C.,L&R.R.	"	100	79.25	76	76	75	76	....	73¾	73¾	68¾	73	68¾	74¾	....	37,247
" " " pf	"	100	....	....	....	....	....	....	....	....	....	....	....	....	....
U.S.Cast I.P.& F	.....	100	6¼	5¾	6¼	5¾	6¼	5¾	6¼	5¾	6	5¾	6	5¾	....
" " " pf	.....	100	43¾	42¾	43¾	42¾	43¾	42¾	43¾	42¾	45¾	42¾	44	44	....
Va.Coal & C	W.Va.	100	17	12	17	15	16	....	16	....	17	....	....	....	....

Ex-dividend. Total sales, 371,830.

PHILADELPHIA, PA.*

NAME OF COMPANY	L'cation.	Par Val.	May 10. H.	May 10. L.	May 11. H.	May 11. L.	May 12. H.	May 12. L.	May 14. H.	May 14. L.	May 15. H.	May 15. L.	May 16. H.	May 16. L.	Sales
Am. Alkali	.....	.....	2 00	....	2.00	....	2.00	....	2.00	....	2.00	....	2 00	....	3,555
" " pf.	.....	.....	....	....	....	....	....	....	.50	....	....	....	....	....	100
Bethlehem Irn	Pa.	.....	58.00	....	....	....	....	....	58.50	....	58.25	....	58.25	....	82
§Bethlehem S'l	"	$50	14.00	13.88	13.50	13.25	13 13	13.00	13 50	13.13	13 75	12.75	13.63	....	3,900
Cambria Iron	"	50	44.00	....	....	....	48.00	....	....	....	44.00	....	....	....	41
*Cambria St'l	"	50	18.25	17 75	17.75	17.50	17 50	17 25	17.50	17.25	17.75	17.50	18 00	17.25	10,454
Leg. I. & S.	"	10	3 00	....	3 00	2.88	3.00	....	2.88	2.75	2.88	2.50	3 88	....	3,910
United Gas I.	"	50	113¾	113	113¾	....	112	....	111	110¼	110	107¾	109¼	107	3,169

Total shares sold, 24,311. * Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia. *Ex-dividend.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par value.	May 10.	May 11.	May 12.	May 14	May 15.	May 16
Belcher	Nev.	$3.00	.10	.10	.11	.11	.11	.11
Best & Belcher	"	3.00	.27	.27	.35	.31	.30	.38
Caledonia	"	3.00	.80	.80	.95	1 05	1.05	1.10
Challenge Con.	"	3.00	.11	.12	.13	.12	.13	.13
Chollar	"	3.00	.16	.17	.20	.21	.17	.18
Confidence	"	3.00	.70	.68	.75	.74	.75	.76
Con. California & Virginia	"	2.50	1 45	1.40	1.60	1 48	1.45	1.40
Crown Point	"	3.00	.09	.09	.11	.09	.10	.10
Gould & Curry	"	3.00	.14	.14	.14	.18	.17	.16
Hale & Norcross	"	3.00	.27	.27	.34	.30	.26	.25
Justice	"	2.00	.01	.01	.01	.01	.01	.01
Mexican	"	3.00	.22	.23	.35	.30	.28	.28
Occidental Con.	"	3.00	.09	.11	.13	.13	.12	.12
Ophir	"	3.00	.47	.47	.66	.55	.63	.54
Potosi	"	3.00	.17	.18	.25	.22	.18	.18
Savage	"	2.50	.12	.13	.16	.13	.13	.13
Sierra Nevada	"	3.00	.29	.29	.30	.32	.33	.32
Standard Con.	Cal.	10.00	3.65	3.65	3.65	3.95	4 25	4.20
Union Con.	Nev.	2.50	.19	.19	.27	.22	.22	.22
Utah Con.	"	3.00	.06	.06	.08	.08	.07	.06
Yellow Jacket	"	3.00	.14	.15	.18	.17	.18	.16

CALIFORNIA OIL STOCKS.*

Name of Company.	No. of shares.	Par Val.	Apr. 14 H.	Apr. 14 L.	Apr. 15. H.	Apr. 15. L.	Apr. 16. H.	Apr. 16. L.	Apr. 17. H.	Apr. 17. L.	Apr. 18. H.	Apr. 18. L.	Apr. 19. H.	Apr. 19. L.	Sales
Anaconda	100,000	$5.00	.45	.40	....	....	.50	.45	.45	....	.40	.35	.40	....	1,000
Barker Ranch	200,000	1.00	1.13	....	....	....	1.15	....	1.20	1.15	1.20	1.15	....	....	1 730
Blue Goose	5,000	100	18.00	....	....	....	20.00	17.00	17.75	16.00	17.50	16 00	18.00	16 00	5
Buckhorn	16,000	10.00	4.00	3.25	....	....	3.90	3.25	4.00	....	4 00	3 00	3.75	....	....
Caribou	100,000	1 00	.45	....	....	....	.50	.40	.53	.45	.5	.40	.70	.45	80
Dominion	100,000	1.00	.40	....	....	....	.50	....	.40	....	.40	....	.40	....	100
Home	100,000	1.00	3 95	3.85	....	....	4 00	3.95	4 05	3 95	4.00	3.90	4 00	3 90	1,450
National	100,000	5.00	....	....	....	....	6.25	....	6 25	....	6.25	....	6.25	....	....
Petroleum	100,000	1.00	.33	....	....	....	.40	.30	.50	.30	.50	.30	.50	.30	130
San Joaquin	100,000	1.00	1.05	....	....	....	2.50	1.40	2.80	1.50	2.25	1.95	2 50	2 00	135
Yukon	100,000	2 50	1.30	1.25	....	....	1.30	1.25	1 80	1.20	1 28	1.15	1 60	1.00	900

* California and Producers Oil Exchanges. Total sales, 6,250 shares.

BOSTON, MASS.†

NAME OF COMPANY.	Par val.	No. of shares.	May 10. H.	May 10. L.	May 11. H.	May 11. L.	May 12. H.	May 12. L.	May 14. H.	May 14. L.	May 15 H.	May 15 L.	May 16. H.	May 16. L.	Sale
Adven'r'e.Cons	$25	100,000	....	....	4.50	....	....	....	....	....	4 50	....	5.00	....	360
Aetna, Cons. g.	5	100,000	2.00	....	....	....	....	....	....	....	....	....	....	....	440
Alloues	25	80,000	....	....	1 75	....	....	....	....	....	....	....	1 75	1 40	275
Amal Cop.	100	760,000	87.75	87.50	87.50	87.00	87.50	86.50	87.00	86.63	87 00	....	87.00	86.50	1,414
Am. Z. L. & S.	25	60,000	15.50	....	....	....	....	....	....	....	....	....	14 00	13.00	....
Anaconda	..	....	....	....	....	....	....	....	....	....	42.38	....	....	42 50	....
Arcadian, c.	25	150,000	18 50	18.0	18.00	16 00	17.00	....	....	....	....	....	17 00	16.00	1,543
Arnold, c.	25	60,000	....	....	....	....	5.50	....	5.50	....	5 63	5.50	....	....	570
Ashbed	25	400,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Atlantic, c.	25	40,000	23.00	....	....	....	....	....	....	....	....	....	23.00	....	140
Baltic, c.	25	100,000	....	....	19 25	19.00	19.75	18 75	....	....	19.00	....	19.00	18.63	745
Bingham, c. g.	10	190,000	9.50	....	....	....	9.50	9.00	9 75	....	9 50	....	9 50	9 00	895
Bonanza, Dev.g	10	300,000	1.00	....	1.00	....	....	....	1.0	....	....	....	1 13	1.00	300
Boston, q.	10	100,000	....	....	....	....	8.00	....	2.75	....	2 50	....	2.50	....	900
Boston & C C	2	200,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Bos.&Mon.Tr.R	25	150,000	295	294	292	290	291	288	286	285	285	278	283	276	1,035
British Col.	5	200,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Butte & Bost., c	10	200,000	68 00	66.00	66.00	65.00	65 00	60.00	61 50	60.00	61.00	60 00	61 00	60.00	632
Cal. & Hecla, c.	25	100,000	755	....	....	....	....	....	....	755	758	752	752	745	81
Centennial, c.	10	300,000	17.00	16.5	17 00	16.75	....	....	16 50	....	16.50	15.75	16.13	16 00	2,180
Cent'l-Eureka	25	90,000	23.00	....	23 00	....	23 75	23.50	....	....	23.75	23.50	23.25	....	365
Central Oil	25	100,000	13.00	....	14.00	....	13.50	....	....	....	....	....	13.50	13.25	425
Cochiti, g.	25	60,050	10.25	10 00	10.00	9.50	9.75	9.50	10.00	9 88	10.50	10.25	10.38	10.00	2,895
Cont.Zl.Mg&Sm	10	157,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Copper Range	10	110,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Crescent, s.	10	100,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Dominion Coal	25	100,000	42.50	....	42 00	....	41 88	38.50	39.50	36 50	39.38	38.25	39.00	38.00	8 088
do. pref.	100	150,000	....	....	183½	....	....	....	....	....	....	....	....	....	20
Elm River	100	20,000	....	....	4.00	....	4 00	....	4.00	....	....	....	3.75	....	895
Federal Steel	12	160,000	40.1	39 00	39 00	38 50	38 38	37.75	39 00	36.75	37.00	34 75	36.25	34 88	7,410
do. pref	100	464,843	68.0	67.5	....	....	....	....	67 0	....	67 00	....	65.50	65.0	315
Franklin, c.	25	532,610	13 5	....	....	....	13.50	12.00	13 50	13.25	13 5	13.25	....	....	1,015
I. Royal Con. c.	25	100,000	25.50	23.00	25 00	24 00	....	....	25.00	23 50	23 50	23 00	23.50	....	1,227
Mass. Con.	25	100,000	6.50	....	....	....	....	....	7.00	6.50	6 50	....	....	....	245
Mayflower	25	104,000	....	....	....	....	2.50	2.25	3.00	....	2 50	2 25	....	....	300
Melones	10	167,577	....	....	....	....	....	....	....	....	....	....	....	....	....
Merced, g.	15	100,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Michigan	25	100,000	....	....	5.00	....	5.00	....	....	....	4.50	....	5.00	....	285
Mohawk, c.	25	100,000	14 00	....	....	....	14.13	....	14.00	....	5.00	14 00	14.00	13.50	780
Montana C & C	5	100,000	7.50	7 25	7.25	....	7.25	7.00	7 50	....	....	....	7 25	7.00	885
N. A. Gold Dreg.	10	100,000	....	....	8 00	....	....	....	....	....	....	....	2 50	....	50
Old Colony	25	100,000	....	....	....	....	....	....	....	....	5 25	....	....	....	50
Old Dominion,c	25	150,000	17.75	17.00	17.00	....	17.00	....	17 00	16 63	....	....	16.50	16.00	1,460
Osceola, c.	25	93,000	66.00	65.00	66 00	....	65.00	63 75	65.00	63 75	63 00	60.2	62.00	61.00	2,171
Parrot, s c.	10	229,850	41.88	40.75	41.25	40 50	40 75	40.13	40.25	39 38	39 50	....	39.50	39.13	2,860
Pioneer	10	100,000	40	....	....	....	....	....	40	....	40	....	.40	....	562
Quincy, c	25	100,000	187	186	185	....	135	....	195	....	135	....	....	....	283
Rhode Island	25	100,000	4.63	4.50	....	....	4.00	....	4 00	....	4.00	....	....	....	450
Santa Fe, g. c.	10	250,000	5.00	....	5.00	4 75	5 00	....	5.00	4 75	4 50	....	4 50	....	1,115
San. Yaquel, g.	5	130,000	1.50	1.25	....	....	1.50	....	1 00	....	1.25	....	....	....	370
Tamarack, c.	25	60,000	180	....	....	....	180	....	180	....	178	175	176	172	198
Tecumseh	25	80,000	3 25	3.00	....	....	....	....	....	....	....	....	....	....	425
Tri Mountain	25	100,000	8 00	....	....	....	....	....	....	....	7.75	....	....	....	265
Union C. L.	25	80,000	....	....	2.00	....	....	....	....	....	....	....	....	....	....
United States.	25	250,000	....	....	8.50	....	....	....	....	....	....	....	....	....	100
U. S. Oil	..	100,000	17.50	16.50	....	....	17.50	17.00	17.00	....	17.00	15.50	16 50	15.75	2,188
Utah Cons,g. c	5	300,000	23.50	....	23.00	27.00	....	....	27 00	26.00	26.50	25.00	25.63	24 63	1,884
Victor	5	200,000	1.00	....	....	....	....	....	....	....	....	....	....	....	100
Victoria	25	100,000	2.50	....	2 50	....	....	....	2.50	....	2.50	....	....	....	470
Washington	25	60,000	....	....	....	....	....	....	....	....	1.00	....	1.00	....	740
White Knob	100	50,000	....	....	....	....	....	....	....	....	....	....	17 00	15.00	110
Winona, c.	25	100,000	3 00	....	....	....	....	....	....	....	2 50	2.25	....	....	315
Wolverine, c.	25	60,000	....	....	....	....	38.50	....	....	....	38.50	38 00	39.00	38.00	250
Wyandotte	25	100,000	....	....	....	....	....	....	....	....	1.25	....	....	....	10

† Official quotations Boston Stock Exchange. Total sales, 53,438.

SALT LAKE CITY, UTAH. May 12.

STOCKS.	Shares	Par val.	Bid.	Asked.	STOCKS.	Shares.	Par val.	Bid.	Asked
Ajax	300,000	$10	$0.52	$0.53½	Horn Silver	400,000	$25	$1.00	$1.10
Alice	400,000	25	....	....	Joe Bowers	700,000	1	.06½	.09
Buckeye	500,000	1	.01	.05	Joe Bowers Ext.	400,000	1	.00¾	....
Bullion-Beck & Ch.	100,000	10	3.00	3.70	Little Pittsburg	400,000	5	.00¾	.02
Centennial Eurka.	200,000	25	22.50	25 00	Lower Mammoth	150,000	1	.48	.50
Chloride Point	900,000	1	.06	.11	Mammoth	400,000	5	2.12	2.22
Daisy	500,000	3	.00¾	.06¾	May Day	400,000	1	1 00¾	1.02¾
Dalton	500,000	5	01.2	.01¾	Mercur	200,000	25	5 30	5.90
Dalton & Lark	2,500,000	1	.02	....	Northern Light	400,000	5	05¾	.06
Daly	150,000	20	1.10	1.60	Ontario	150,000	100	7.50	....
Daly West	150,000	20	17.36	17 80	Richmond-An.	500,000	1	.14	.15
Dexter	200,000	5	.80	1.25	Sacramento	1,000,000	5	.22	.23
Eagle	250,000	1	....	....	Silver King	150,000	20	49.00	51.00
Eagle & Blue Bell	250,000	1	.88	.90	Star Consolidat'd	500,000	1	.08	.15
Four Aces	250,000	1	.05¾	.05¾	Sunbeam	250,000	1	.06	.10
Galena	100,000	10	.14	.30	Sunshine	250,000	10	05	....
Geyser-Marion	300,000	5	.05¾	10	Swansea	100,000	5	3.57½	3.77½
Golden Eagle	400,000	1	.01¾	.02¾	South Swansea	150,000	1	1.20	1.25
Grand Central	250,000	1	5 25	5.50	Utah	100,000	1	.45	.90
Homestake	400,000	1	....	.06	Valeo	200,000	10	.75	.80

TORONTO, ONT.

NAME OF COMPANY.	Par Val.	May 9. B.	May 9. A.	May 10. B.	May 10. A.	May 11. B.	May 11. A.	May 12. B.	May 12. A.	May 14. B.	May 14. A.	May 15. B.	May 15. A.	Sales
Ontario:														
Golden Star	1	.05¼	.07¼	.05	.07¼	.05¼	08	.05¾	.07¼	.06¼	.08¼	.07¾	.10¾	14,000
Ham Reef	1	.10¾	.12¾	.11¼	.2¾	.11	.12¼	.11	.12¾	.10¾	.12¾	.10	.11¾	16,500
Olive	1	.14	.23	.15	.24	.15	23	....	....	.10	.20	.10	25	....
British Col.:														
Athabaska	1	.24	.28	.24	.28	.24¼	.28	.23¾	.28	.26	.28	.25	.28	5,000
Big Three	1	.06	.07	.05¾	.07	.05¾	.07	.05	.06¾	.05½	.06¾	.05¾	.06¾	6,000
CaribooM'K	1	.93	1.05	94	1 05	.94	.93¾	.99	.93¾	1 00	....	.92	.99	1,500
Crow's N. C.	25	34.50	38.50	33.50	36 00	32.50	35 50	33.00	36.00	33.25	36 00	32.25	35.00	....
Deer Trail	1	.07¾	.08¾	.07¾	.08¾	.07¾	.08¼	.07½	.08¾	08	.09¼	.08	.09	70,500
Eve Star	1	.08	.10	.08	.10	.08	.10	.08	.10	.08	.10	.08	.10	1,000
Fairview	1	.03

STOCK QUOTATIONS.

COLORADO SPRINGS, COLO.‡

Name of Company.	Par val	May 7. B.	May 7. A.	May 8. B.	May 8. A.	May 9. B.	May 9. A.	May 10. B.	May 10. A.	May 11. B.	May 11. A.	May 12. B.	May 12. A.	Sales.
Acacia	$1	.367	.37	.365⅛	.365⅛	.35½	.33⅜	.33⅜	.33½	.37½	.37½	.36¼	.37	112,000
Alamo	1	.14½	.15	.14½	.15	.14½	.15	.14½	.15	.14½	.15	.14½	.15	9,500
Am. Con	1	.06	.06¼	.06	.06¼	.06¼	.06¼	.06	.06¼	.04½	.06⅜	.06	.06¼	5,060
Anaconda	1		.33	.33	.34	.33¼		.33¼	.34	.33⅜		.33	.33½	32,280
Anchor	1	.03½	.03¼	.03¼	.03¼	.03¼	.04	.03¼	.04	.03¼	.03¼	.03¼	.04	23,000
Anchorial	1	.89		.89						.85		.85		
Antelope	1	.03½	.03⅜	.03¼	.03⅜	.03⅜	.03⅜	.03¼	.03½	.03¼	.03⅜	.03¼	.03½	26,000
Aola	1	.06⅜	.07	.06⅜	.06⅜	.06⅜	.06⅜	.06¼	.06⅜	.06⅜	.06⅜	.06⅜	.06⅜	36,000
Arcadian	1			.05⅜		.05⅜		.05⅜		.05⅜		.05.6		3,000
Arc'ntum	1	.19		.20	.21	.20.2		.20	.21	.20		.20	.21	700
Banner	1	.04½	.04⅜	.04	.04⅜	.04⅜	.04⅜	.04½	.04⅞				.04⅜	3,000
Battle Mt.C	1	.30½	.31	.30⅜	.30¼	.30.2	.30¼	.30	.30½	.30	.30⅜	.30	.30¼	9,500
Ben Hur	1	.07	.07⅜	.07⅜	.07⅜	.02	.07⅜			.07⅜	.06⅜	.07⅜	.06⅜	7,000
Black Bell	1		.13⅜	.11⅜		.11	.11⅜	.11	.11⅜	.11⅜	.11⅜	.11⅜	.11⅜	6 000
Blue Bell	1	.13⅜		.13⅜		.12⅜	.13	.12½	.13	.12⅜	.13	.12⅜	.13	9,000
Bob Lee	1	.06⅜	.06½	.05⅜	.06⅜	.05⅜	.06	.06¼	.05⅜	.05	.05⅜	.05¼	.05⅜	43,000
Buckhorn	1	.07	.07⅜	.06¼	.07	.06⅜	.07	.06¼	.06¼	.06¼	.07	.06¼	.06.6	18,000
Cadillac	1	.02	.02½	.02⅜	.02⅜	.02	.02½	.02¼	.02⅜	.02	.02¼	.02	.02¼	15,000
Central C'n	1		.06⅜	.06	.06¼	.06⅜	.06⅜	.06¼	.06¼	.06¼	.06⅜			3,000
Champion	1	.07¼	.07⅜	.07¼	.07⅜	.07⅜	.07¼	.07	.07¼	.07¼	.07⅜	.07	.07⅜	6,500
Chicote	1	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	3,500
C.K.&N	1	.02⅜	.02½	.02⅜	.02¼	.02¼	.02⅜	.02¼	.02½	.02¼	.02⅜	.02¼	.02⅜	7,000
C.C.Col'bia	1	.08	.08¼	.08¼	.08¼			.08	.08⅜	.08	.08¼	.07⅜	.08	24,000
C.C.G.Ext	1	.07¼		.07⅜	.08⅜	.07⅜	.08¼	.08¼	.10	.08⅜	.10	.07⅜	.10	3,000
C.C. & Man	1	.11½	.11⅜	.11¼	.11⅜	.11⅜	.11¼	.11¼	.11¼	.11¼	.11¼	.11¼	.11⅜	17,000
Copper Mt.	1	.04⅜	.05	.05¼	.05⅜	.05¼	.05⅜	.05¼	.05⅜	.05¼	1.05¼	.05¼	6.05¼	44,000
Creede&CC	1	.14	.15¼	.14⅜	.15	.14⅜	.15	.14½	.15	.14⅝	.15	.14½	.15	9,000
C. C. Con	1	.14	.14⅜	.14⅜	.14⅜	.14	.14¼	.14	.14⅜	.14	.14⅜	.14.2	.14⅜	62,000
Dante	1	.14½	.15	.15	.15¼	.14½	.15	.14⅜	.15	.14⅜	.14⅝	.19⅝	.19⅞	23,500
Des Moines	1	.06⅜	.06⅜	.06¼	.06¼	.06⅜	.06⅜	.06¼	.06¼	.06¼	.06⅜	.06⅜	.06¼	18,000
Eclipse	1	.08⅜	.08¼	1.08	.08⅜	.08	.08¼	.08¼	.08¼	.08	.08¼	.08	.08.2	1,000
ElktonCon	1	1.33⅜	1.33⅜	1.33⅜	1.33⅜	1.33¼	1.34	1.33¼	1.34⅛	1.35⅜	1.43⅜	1.37		23,230
El Paso G.	1	.03¼		.59	.40	.42¼	.45¼	.42	.42⅜	.43	.43¼	.39¼	1.03¼	41,676
Enterprise	1	.24½	.25		.24½	.23	.23½	.24	.23¼	.23⅜	.23	.23	.23¼	8,130
F. Rawlins	1	.47		.46	.50	.47¼	.50	.46¾	.50			.45	.53	8,500
Favorite	1													
Findley	1	.15¾	.15¾	.15¾	.15¾	.15¼	.16	.15¼	.15¾	.15¾	.15¾	.15¾	.15¾	29,000
Garf. Con	1		.20	.16	.19	.19¼				.19		.19	.19	1,000
Golden Fl.	1	.32	.40	.32	.40	.32	.40	.32	.40	.32	.40	.32		100
Gold Hill	1	.03¾	.03¼	.03⅜	.03⅜	.03⅜	.03¼	.03¼	.03¾	.03⅜	.03⅜	.03¼	.03⅜	54,000
Gold.Sov'n	1	.11⅜	.11⅜	.11	.11¼	.11¼	.11⅜	.11	.11¼	.10⅝	.10⅜	.10¼	.10⅜	52,000
Hayden	1	.02	.02¼	.02¼	.02¼	.02¼	.01¾	.02¼	.02¼	.02¼	.02¼	.02¼	.02¼	14,000
Ida May	1	.26⅜	.27¼	.26¾	.27⅜	.26¼	.27¼	.26.6	.27¼	.26¾	.27¼	.26¾	.27¼	18,855
Indep'ndce	1	.74⅜	.75	.75	.76	.72½	.73	.72	.72⅜	.70¾	.71	.70¾	.71¼	46,500
Ing. Con	1	.25½		.25¾	.27¼	.25¼	.28¼	.25¼	.25⅜	.24¾	.24¾	.24¾		72,000
Isabella	1	1.28¼	1.28¼	1.25¼	1.26¼	1.25¼	1.27	1.28¼	1.23¾	1.22¼	1.21¾			84,825
Jack Pot	1	.66¼		.64¼	.67	.63	.64	.62	.64	.63	.64	.63		8,000
Josephine	1	.02½	.02⅜	.02¼	.02⅜	.02¼	.02¾	.02¼	.03	.02⅜	.02¾	.02¼	.03	12,000
Key West	1	.03⅜		.03¼	.04	.03¼	.04	.03¾	.04	.03¼	.04	.03¼	.04	13,000
Lexington	1	.17¼	.17⅜	.17⅜	.17⅜	.17¼	.17⅜	.17¼		.16⅜		.16¼	.16⅜	53,000
Magnet R.	1	.04	.04¼	.03½	.03¾	.04	.04½	.04	.04½	.04	.04½	.04	.04½	8,000
Margaret	1	.03¾	.03½	.03¾	.03¾	.03¾	.03¾		.03¾	.02¾	.03	.02¾	.03	8,000
Margery	1	.05	.05⅜	.05	.05½	.05	.05¼	.04¾	.05	.05	.05¼	.04¾	.05	27,000
Matoa	1	.31	.33	.31	.32¼	.30	.32	.31¼	.32	.30¾	.31	.31		8,000
Midway	17	.06⅜	.06½	.06⅜	.06¾	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾	7,500
M. J. T.	1	.04⅜	.04½	.04¼	.04⅜	.04¼	.04⅜	.04¼	.04½	.04¼	.04⅜	.04¼	.04⅜	62,000
Mobile	1	.03¼	.03⅜	.03¼	.03⅜	.03¼	.03⅜	.03¼	.03⅜	.03¼	.03⅜	.03¼	.03⅜	4,000
Moll.Dwyer	1	.03⅜	.03⅝	.03⅜	.03⅝	.03⅜	.03¾	.03⅜	.03¾	.03⅜	.03¾	.03⅜	.03¾	87,000
Mollie Gib.	1	.24	.25	.24½	.25	.24½	.25	.23½	.24½	.23½	.25	.23		13,000
Monarch	1	.08½	.09	.08¼	.09	.08¾	.08¾	.08¾	.09	.08¾	.09	.08¾	.09¼	13,000
Montreal	1	.09¾	.09¼	.08¾	.09	.08¾	.09	.08¼	.09	.08¾	.09	.09	.09¼	7,000
Moon-A'c'r	1	.62	.63½	.63		.63	.63¼	.64	.65	.63½	.64½	.63½	.65	6,800
Morning S	1		.03¾	.03¾	.03⅝	.03¾	.07¾	.04	.04½	.03¾	.04½	.03¾	.04¾	4,000
Mtn. Beauty	1	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	109,000
Mt. Rosa	1	.78½	.80	.78¼	.80	.78¼	.80	.78	.80	.78		.78		
National	1	.08¾	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾	.09¼	.08¼	.08¼	.08¾	.08¼	19,000
Nellie V	1	.11¾	.12	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	22,000
New Haven	1	.09½	.09¼	.09	.09¼	.09¼	.09¼	.09¾	.09¼	.09¼	.09¼	.09¼	.09¾	170 000
OliveB'nch.	1	.07¾	.07¾	.07¾	.07¾	.07¼	.07¾	.07¾	.07¾	.07¾	.07¾	.07¾	.08	8,000
Oriole	1	.04¾	.05	.04¼	.04¾	.04¼		.05		.05		.05	.05	2,000
Orphan	1	.21	.23	.20	.23¼	.21	.23	.20	.23	.21¼	.22	.21	.22	5,000
Pelican	1	.02¾	.03¼	.03¼		.03¼	.03¾	.02¼	.03¼	.02¾	.03	.03¼	.03¼	24,000
Pharmacist	1	.13½	.13¾	.14½	.14¾	.13¾	.13¾	.13¼	.14	.13¾	.13¾	.13¾	.13¾	188,000
Pilgrim	1	.13	.14	.13¾	.13¾	.13¾	.13¾	.12¾	.13¾	.13¾	.13¾			17 000
Pinnacle	1	.21	.23	.21½	.22¾	.20¾	.23	.21		.21½	.23	.21½	.22½	1,000
Portland	1			2.72	2.79	2.75		2.78	2.80	2.70	2.75¾	2.75¼		4,900
Prince Alb.	1	.04¼	.04½	.04¼	.04¾	.04¼	.04½	.04¼	.04¾	.04¼	.04¾	.04¼	.04¾	19,000
Princess	1	.06¾	.07	.06¾	.07¼	.06¾	.07	.06¾	.06¼	.06¾	.06¾	.06¾	.06¾	24,300
Progress	1	.06		.06	.08	.06¼	.07	.06¼		.06¼	.07	.06¼	.06¾	10,000
Pythias	1	.06¼	.06¾	.06¾	.06¾	.06¾	.07	.06¼	.06¾	.06¾	.06¾	.06¾		8,000
Raven	1	.68	.69	.68	.69	.63¾	.63¾	.68¾	.69	.69	.69¾	.69	.70	10,900
Republic	1	.06¾	.07¾	.07¼	.07¼	.07	.07¼	.07½	.07¼	.06¼	.07	.06¾	.07	14,000
Rob't Burns	1	.04¾	.05	.04¾	.05	.05	.05¼	.04¾	.05¼	.04¾	.05	2.04¾	.05	4,500
Rose Maud	1	.10¼	.10½	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.10¾	30,500
Rose Nicol	1	.14	.14½	.14½	.14¾	.13½	.13¾	.13¾	.14	.13¾	.14	.13¾	.14	41,500
Silver Gold	1	.01¼	.01⅜	.01⅜	.01⅜	.01¼	.01⅜	.01¼		.01¼	.01⅜	.01¼	.01⅜	7,000
Specimen	1	.13½	.13¾	.13¾	.13¾	.13	.13¾	.13	.13¼	.13	.13¾	.13	.13¾	48,750
Tornado	1	.47	.48	.47	.49¾	.47	.49	.47¼	.48	.47¼	.48	.48	.49	4,500
Tourmaline	1													
Trachyte	1	.07¾	.07¾	.07	.07¼	.07	.07¼	.07	.07¾	.07¾	.07¾	.07¾	.07¼	5,000
Uncle Sam	1	.05		.05	.08¼	.05	.05¼	.05		.05	.05¼	.05	.05¼	1,000
Union	1		.48		.49	.46	.49	.45	.48	.40	.48		.48	1,500
Vindicator	1	1.50	1.52	1.45	1.51¾	1.51		1.59		1.48	1.50	1.45	1.50	6,100
Work	1	.34	.34¼	.33¾	.34		.33	.33	.34	.33	.33¾	.33	.33¾	6,000
Zenobia	1	.19	.19¼	7.19¾	.19¾				.19¼		.19	.17¾	.19	25,500

‡ Colorado Springs Mining Stock Exchange. Total sales, 2,201 593 shares.

MONTREAL CANADA.*

Name of Company.	Par Val	Week. May 13. H.	Week. May 13. L.	Sales.
Big Three	$1	.06	.05	16,425
California	1	.10½	07½	8,350
Can. Gold Fields	0.10	.08	.05	1,500
Decca	1	.07½	.05½	66,500
Dear Trail Con	1	.10	.07½	69,500
Giant	1			
Golden Star	1	.10	.06	
Gold Hills Dev	1	.05	.02	1,500
Knob Hill	1	.60	.50	6,500
Majestic	1			
Monte Christo	$1	.05¼	.03½	1,000
Montreal G. F	1	.05	.02½	8,500
Montreal-London	0.24	.30	.23½	12,150
Okanogun	1			
Payne	1	1.22	1.05	3,250
Rambler-Cariboo	1	.30	.20	
Republic Con	1	1.08	.90	1,000
Slocan-Sovereign	1	.32	.20	1,400
Virtue	1	1.13	1.04¾	15,200

*Montreal Stock Exchange. Total sales. 202,775 shares.

MEXICO.

May 5.

Name of Company.	No. of shares.	Last div'd.	Prices. Op'g.	Prices. Cl'g.
Durango:				
Barradon y Cab	2,400		$40	$40
Candelaria de Pan.	1,200		20	20
Cusuaya Guan	2,400		15	30
Restauradora	10,000		10	20
Guanajuato:				
Angustias	2,400	5.00	200	205
Cinco Senores y An	2,000	15.00	295	300
Guadalupe Hacie'a	10,000	2.00	200	200
Trinidad, aviadora.	2,000		15	6
do. aviada	400		15	10
Zona Minera de Pos	2,400		6	8
Hidalgo:				
Amistad y Concord.	9,600	1.47	22	20
Arevalo	720		200	200
Bartolome de Med.	2,000	2.00	65	70
Carmen	1,100	7.75	250	300
Luz Ca Maravillas	800		120	100
Pabellon	800	27.89	30	30
Hidalgo:				
Real del Monte	2,554	10.00	500	550
San Francisco Ho	6,000	5.00	170	145
Soledad	960	5.00	170	230
Sorpresa	960	7.50	280	280
Union Hacienda	2,000	5.00	290	250
Mexico:				
Coronas	800		75	75
Esperanza y An	3,000	10.00	1,460	1,460
Michoacan:				
Luz de Borda ava	4,000		22	18
S. Luis Potosi:				
Concep. y An	2,400		225	240
Zacatecas:				
Asturiana y An	2,500	10.00	140	145
Cabeson	2,400		15	15
C'delar. de Finos	2,500		240	230
Palma de Somb	2,400		50	40

DENVER, COLO.‡

Name of Company.	Par val.	May 5. B.	May 5. A.	May 7. B.	May 7. A.	May 8. B.	May 8. A.	May 9. B.	May 9. A.	May 10. B.	May 10. A.	May 11. B.	May 11. A.	Sales.
Acacia	1			.35½			.37½			.36¾			.37¾	1,000
Anaconda	1		.33		.34½			.30	.33½				.34	
Arg.	1	.30	.30½			.29	.31						.21	
C. C. Bull'n	1	.02	.03½	.2	.02½	.02	.02½	.02	.02½	.03	.02½			29,000
Dictator	1	.02¾	.03	.02½	.03	.027	.03		.03¼	.02	.03	.03¾	.037	
Elkton	1	1.33½	1.34	1.34		1.33		1.33		1.33		1.34		2,000
Enterprise	1					.22	.25							
Favorite	1	.02½					.02¾	.02	.02½	.02½	.02½	.02½	.02¾	
Goldstone	1	.01½				.02				.01¾	.02¼	.02½	.02¾	3,000
Gold Sovn	1						.11¾	.10¾	.11			.107	.11¾	2,000
GraniteHill	1			.05¾	.05¾	.04½							.04¾	
Indepen'ce	1			.72¾	.73¾	.75	.76	.74	.75½			.21¾	.22¾	500
Ing Con	1							.25	.25¾			.25¾	.23¼	1,000
Isabella	1	1.27	1.28¼	1.27	1.28	1.26	1.27	1.25¾		1.23		1.22		2,000
Mt. Beauty	1	.10¾	.10¾		.12¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	.11¾	
New Haven	1	.09¾	.09¾	.09	.09¼	.08¾	.09	.08¾	.09¼	.09¼	.09¾	.09	.09¾	2,000
New Zeal'd	1	.40	.45	40	0.47½			.40	.50	.42	.50	.42	.49	2,500
Ophir	1	.62	.65	.62½	.63¾	.63	.66							
Puritan	1	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	8,000
Reno	1	.06¾	.06¾	.06¼		.06¼	.06¾	.06¼				.06¼		6,000
Rose Nicol	1					.14	.14¼	.13¾	.14					
Specimen	1	.13	.13¾									.13	.13¼	
Union	1			.49				.49						
Wire Gold	1	.009¾	.01¼	.01¾	.009		.009¾	.01¼					.01¾	

‡ Official Quotations Denver Stock Exchange Total sales, 59,000 shares.

PARIS.

Apr. 26.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	75.00	1,980.00	1,979.00
" " Firming	"	"	3,000,000	500	125.00	3,810.00	3,800.00
" " Fives-Lille	"	"	12,000,000	500	35.00	860.00	846.00
" " Huta-Bank	Russia	Iron & steel		500		4,900.00	4,870.00
" " la Marine	France	Steel mfrs	30,000,000	500	50.00	1,850.00	1,831.00
Anzin	"	Coal			220.00	6,990.00	7,100.00
Boleo	Lower Cal	Copper		500	1.07	3,080.00	3,060.00
Briansk	Russia	Coal & Iron		500		1,300.00	1,250 00
Champ d'Or	S. Africa	Gold	5,575,000	25	3.75	36.50	34.50
Courrieres	France	Coal	600,000	300	70.00	3,094.00	3,110.00
Dombrowa	Russia	Coal		500	12.50	1,111.00	1,075.00
Donetz	"	Steel				1,125.00	1,100.00
Dynamite Centrale	France	Explosives		500	25.00	464.00	458.00
Escombrera-Bleyberg	Spain	Lead		500	35.00	1,310.00	1,305.00
Fraser & Frer	Brit. Col'mb	Gold	280,000	25		12.25	11.50
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	170.00	170.00
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	605.00	605.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	1,350.00	1,415.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,000	500	30.00	505.00	505.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1,225.00	1,225.00
Naphte Baku	Russia	Petroleum				828.00	815.50
Naphte, Le	"	"				1,350.00	1,300.00
Naphte Nobel	"	"				688.50	670.00
" " parts	"	"				3,750.00	3,350.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	10.00	521.00	500.00
Penarroya	Spain	Coal, etc		500	65.00	2,810.00	2,790 00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25		4.50	4.50
Salines de l'Est	France	Salts		500	6.50	218.00	210.00
Salines du Midi	France	" etc		500	25.00	1,040.00	1,020.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	45.00	841.25	823.75

LONDON.

May 4.

Name of Company.	Country.	Author-ised capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
			£ s. d.	s.d.		£ s. d.	£ s. d
Alaska Goldfields	Alaska	£300,000	1 0 0	2 1	Mar., 1899	18 9	1 1 3
Alaska-Mexican, g	"	200,000	1 0 0	0 4.8	May, 1900	12 6	17 6
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	"	4 15 0	5 0 0
Anaconda, c., s	Montana	6,000,000	5 0 0	8 2	Apr., 1900	29 2 6	9 5 0
Chiapas, g., s., c	Mexico	252,500	1 0 0			6 0	7 0
De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1900	2 6	3 0
Elkhorn Priority (New)	Colorado	87,500	1 0 0	2 0	June, 1899	1 3	3 9
Golden Gate, g	California	80,000	1 0 0			1 0	2 0
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Jan., 1900	15 0	17 6
Hall Mines, c., s	British Col	300,000	1 0 0	1 0	May, 1899	1 6	2 0
Le Roi, g	"	1,000,000	5 0 0	5 0	Nov., 1899	6 10	6 12 6
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	10 0	15 0
Montana	Montana	660,000	1 0 0	6	Apr., 1899	3 0	4 0
Newfoundland, c	Newfoundland	250,000	1 0 0			5 0	10 0
Palmarejo & Mexican, g	Mexico	700,000	1 0 0			1 6	2 6
Stratton's Independence	Colorado	1,100,000	1 0 0	2 0	Mar., 1900	18 9	1 3
Topiapo, g	Chile	200,000	2 0 0	4 0	Dec., 1899	4 6	4 11
Frontino & Bolivia, g	Colombia	140,000	1 0 0	21 6	Oct., 1899	1 11 3	1 13 9
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	Dec., 1899	1 7 6	1 10 0
UtahCon., g (High'ndBoy	Utah	300,000	1 0 0	rts.	Mar., 1898	5 17 6	6 2 6
Velvet, g	"	100,000	1 0 0			1 0 0	1 2 6
Ymir, g	British Col'mbia	100,000	1 0 0	1 0	Nov., 1899	1 13 9	1 16 3
British Am. Corp	"	1,500,000	1 0 0	2 0	Mar., 1900	1 12 9	1 15 0
Linares, l	Spain	45,000	3 0 0	15 0	Mar., 1900	9 0 0	10 0 0
Mason & Barry, c., sul	Portugal	420,000	2 0 0	10 0	May, 1900	4 2 6	4 7 6
Rio Tinto, c	Spain	1,625,000	5 0 0	45 0	May, 1900	55 2 6	55 7 6
" pref	"	1,625,000	5 0 0	2 6	"	5 0 0	5 5 0
Tharsis, c	"	1,250,000	2 0 0	15 0	Apr., 1900	9 2 6	9 7 6
Assoc. Gold Mines	W. Australia	500,000	1 0 0	1 6	Jan., 1900	1 13 9	1 16 3
Broken Hill Prop., s	N.S.Wales	384,000	8 0 0	1 0	Apr., 1900	2 5 0	2 6 0
Great Boulder Prop	W. Australia	175,000	2 0 0	6	Apr., 1900	1 10 0	1 11 6
Hannan's Brownhill, g	"	140,000	1 0 0	7 6	May, 1900	9 10 0	9 15 0
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	May, 1900	13 1 3	13 3 9
Kalgurlie, g	"	120,000	1 0 0	rts.	Oct., 1899	6 15 0	6 17 6
Lake View Consols, g	"	250,000	1 0 0	10 0	Apr., 1900	11 15 0	11 17 6
Mt. Lyell M. & R., l., c	Tasmania	900,000	3 0 0	5 0	Apr., 1900	8 17 6	9 2 6
Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	May, 1900	5 0 0	5 2 6
Waihi, g	New Zealand	320,000	1 0 0	2 6	Apr., 1900	9 18 9	9 16 3
Champion Reef, g	Colar Fields	225,000	10 0 0	4 0	May, 1900	6 6 8	6 8 9
Myaore Gold, g	"	250,000	10 0 0	5 6	Mar., 1900	9 7 6	9 10 0
Nundydroog, g	"	242,000	1 0 0	2 6	Mar., 1900	3 8 9	3 11 3
Ooregum, g	"	145,000	1 0 0	2 0	Apr., 1900	3 17 6	4 0 0
" pref. g	"	120,000	1 0 0	2 0	" 1900	4 17 6	5 2 6
British S. Af., chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 10 0	3 15 0
Cape Copper, c	"	600,000	1 0 0	1 3 0	Jan., 1900	6 5 0	6 10 0
" pref	"	150,000	2 0 0	1 5 0	" 1900	5 15 0	5 15 0
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug , 1899	4 10 0	4 15 0
Jon. Deep Level, g	"	300,000	1 0 0	x all.	June, 1898	1 2 6	1 7 0
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	12 5 0	12 15 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Sept., 1899	27 7 6	27 12 6
Ferreira, g	Transvaal	80,000	1 0 0	30 0	Aug., 1899	18 10 0	19 0 0
Heidenhuis Deep, g	"	250,000	1 0 0	5 0	Aug., 1899	8 15 0	9 5 0
Heidenhuis Est., g	"	200,000	1 0 0	10 0	Aug., 1899	5 12 6	5 15 0
Henry Nourse, g	"	125,000	1 0 0	10 0	Aug., 1899	6 15 0	7 0 0
Jagersfontein, d	Orange Fr. St.	1,000,000	5 0 0	6 0	Apr., 1900	15 10 0	16 0 0
Johannesburg Con. Invst	So. Africa	2,750,000	1 0 0	2 0	Nov., 1899	1 10 0	1 12 6
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug, 1899	5 0 0	5 10 0
Langlaagte Estate, g	"	470,000	1 0 0	9 0	Sept., 1899	2 15 0	3 0 0
May Con., g	"	250,000	1 0 0	6 0	Aug., 1899	3 15 0	4 0 0
Meyer & Charlton, g	"	100,000	1 0 0	8 0

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Author-ized Capital Stock.	Shares Issu'd No.	Par Val	Dividends. Paid, 1900.	Total to Date.	Latest. Date.	Amt.
1	Acacia, g.	Colo.	$1,500,000	1,500,000	$1				
2	Ætna Con., q.	Cal.	500,000	100,000	5	$30,000	$225,000	April 1900	.15
3	Alabama Coal & Iron, pf	Ala.	2,500,000	25,000	100	87,500	87,500	May. 1900	1.75
4	Alamo, g.	Colo.	1,000,000	1,000,000	1				
5	Alaska-Mexican, g.	Alask	1,000,000	180,000	5	18,000	447,031	Jan. 1900	.10
6	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	75,000	4,295,000	Jan. 1900	.37½
7	Alice, g. s.	Mont.	10,000,000	400,000	25		1,075,000	April. 1898	.05
8	Alliance, g.	Colo.	500,000	450,000	1		31,500	Dec. 1899	.07
9	Amalgamated, c.	Mont.	75,000,000	750,000	100	3,000,000	4,500,000	April. 1900	2.00
10	Amazon, g.	Colo.	600,000	600,000	1	42,000	62,000	Mar. 1900	.05
11	American Coal	Md.	1,500,000	60,000	25	75,000	802,500	Mar. 1900	1.25
12	American Gold, g. s. c. l.	Colo.	3,000,000	300,000	10		446,000	Dec. 1899	.04
13	Amer. Sm. & Ref., pref.	U. S.	32,500,000	325,000	100	1,263,925	1,832,675	April. 1900	2.14
14	Am. Steel & Wire, pf.	U. S.	40,000,000	400,000	100	1,400,000	4,200,000	April. 1900	1.75
15	Am. Steel & Wire, com.	U. S.	50,000,000	500,000	100	875,000	875,000	April. 1900	1.75
16	American Zinc	Kas.	500,000	5,000	100	15,000	35,000	Mar. 1900	1.00
17	Am. Zinc, Lead & Sm.	Mo.	2,500,000	60,000	25	60,000	180,000	Jan. 9001	1.00
18	Anaconda Copper	Mont.	30,000,000	1,200,000	25	2,400,000	14,550,000	April. 1900	2.00
19	Anchoria-Leland, g.	Colo.	600,000	600,000	1		198,000	April. 1899	.08
20	Anglo-Mexican, g.	Mex.	2,001,625	400,230	5		1,728,993	Dec. 1898	.24
21	Apollo Con., g.	Alask	1,000,000	100,000	10	70,000	210,000	Jan. 1900	.07
22	Appie Ellen, g.	Colo.	600,000	600,000	1		25,000	Aug. 1898	.01
23	April Fool	Nev.	500,000	500,000	1		16,000	Oct. 1899	.01
24	Argentum-Juniata, g.	Colo.	1,300,000	650,000	2		156,000	Oct. 1895	.03
25	Argonaut	Cal.	2,000,000	200,000	10	50,000	470,000	Mar. 1900	.05
26	Arizona Copper	Ariz.	3,190,550			421,153	1,309,572	Mar. 1900	1.32
27	Associated, g.	Colo.	1,250,000	1,250,000	1		84,000	Feb. 1899	.01
28	Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	860,000	Feb. 1900	2.00
29	Aurora, i.	Mich.	2,500,000	100,000	25		890,000	June. 1899	.50
30	Bald Butte	Mont.	250,000	250,000	1		769,648	Dec. 1899	.08
31	Bankers, g.	Colo.	1,250,000	1,250,000	1				
32	Bankok Cora Belle, s.	Colo.	600,000	600,000	1		107,510	July. 1896	.01
33	Battle Mtn. Con., g.	Colo.	2,500,000	2,500,000	1				
34	Big Four, g.	Colo.	1,000,000	1,000,000	1				
35	Big Seven, g.	Cal.	100,000	100,000	1		6,000	April 1898	.03
36	Big Six, g. s.	Colo.	500,000	500,000	1		15,000	May. 1898	.00½
37	Boston-Aurora, pref.	Mo.	800,000	32,000	25	21,120	50,160	April 1900	.17
38	Boston & California	Cal.	600,000	600,000	1		72,000	June. 1899	.06
39	Boston & Colo. Smelting	Colo.	750,000	15,000	50	22,500	292,500	April. 1900	.75
40	Boston Duenweg, z.	Mo.	1,000,000	40,000	10	16,000	48,000	April. 1900	.10
41	Boston Get There, z.	Mo.	250,000	22,500	10	9,000	20,250	April 1900	.10
42	Boston-Little Circle, z.	Mo-K.	1,000,000	100,000	10	40,000	120,000	April. 1900	.10
43	Boston & Mont. Con.	Mont.	3,750,000	150,000	25	2,700,000	17,200,000	May. 1900	10.00
44	Boston Providence, z.	Mo.	150,000	15,000	10	3,000	10,350	April. 1900	.05
45	Boston, q.	Cal.	1,000,000	100,000	10	10,000	20,000	Jan. 1900	.10
46	Boston Sunflower, z.	Mo.	150,000	15,000	10		4,500	Oct. 1899	.30
47	Breece, i.	Colo.	5,000,000	200,000	25	10,000	80,000	Feb. 1900	.05
48	Buffalo Hump, g.	Idaho	2,500,000	250,000	10	100,000	100,000	May. 1900	.10
49	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	40,000	2,478,400	April. 1900	.10
50	Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	84,000	885,090	April. 1900	.07
51	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	2,000,000	68,850,000	Mar. 1900	20.00
52	Cambria Steel	Pa.	16,000,000	320,000	50	160,000	1,280,000	Feb. 1900	.50
53	Cariboo-McKinney, g.	B.Col	800,000	800,000	1		311,965	June. 1899	.01½
54	Centen l-Eureka, g. s. l. c.	Utah.	5,000,000	100,000	25	117,700	2,267,700	April. 1900	1.00
55	Central Lead, l.	Mo.	1,000,000	10,000	100	20,000	162,000	April. 1900	.50
56	Champion, g. s.	Cal.	340,000	34,000	10		321,700	Nov. 1899	.25
57	Charleston, p. r.	S. C.	1,000,000	10,000	100		200,000	June. 1899	2.00
58	Cloverdale, z.	Mo.	1,000,000	100,000	10	30,000	30,000	April. 1900	.20
59	Colonial, l.	Mo.	1,000,000	1,000,000	1		10,000	Aug. 1899	.01
60	Colorado Smelting	Mont.	1,000,000	100,000	10		1,945,000	Jan. 1899	1.00
61	Commodore	Colo.	1,200,000	1,200,000	1		432,000	Jan. 1899	.04
62	Commonwealth, z., pref.	Mo.	500,000	100,000	5	20,000	40,000	April. 1900	.05
63	Consolidated Gold Mines	Colo.	1,000,000	1 000,000	1	20,000	40,000	April. 1901	.01
64	Consolidation Coal	Md.	10,250,000	102,500	100	205,000	5,921,650	Feb. 1900	2.00
65	Cons. Zinc & Lead, pf.	Mo.	400,000	400,000	1	8,000	8,000	Jan. 1900	.20
66	Continental, z.	Mo.	1,500,000	150,000	10				
67	Cordell, z. l.	Mo.	300,000	60,000	5	3,000	9,000	April. 1900	.05
68	Cripple Creek Con.	Colo.	2,000,000	2,000,000	1	160,000	160,000	Mar. 1900	.08
69	Cœsus, g.	Cal.	1,000,000	190,000	5	22,800	71,800	April. 1900	.06
70	Crowned King, g. s. l.	Ariz.	6,000,000	600,000	10		242,760	May. 1899	.02
71	Dalton & Lark, g. s. l.	Utah.	2,500,000	2,500,000	1		87,500	Mar. 1896	.00½
72	Daly	Utah.	3,000,000	150,000	20		2,925,000	Mar. 1897	.25
73	Daly West	Utah.	3,000,000	150,000	20	187,500	307,500	April. 1900	.25
74	Damon, g.	Colo.	2,000,000	2,000,000	1				
75	Deadwood-Terra, g.	S. D.	5,000,000	200,000	25		1,350,000	May. 1898	.15
76	Deer Trail Con.	Wash	3,000,000	3,000,000	1		55,000	Dec. 1899	.00½
77	De Lamar, g. s.	Idaho	2,000,000	400,000	5		2,346,000	May. 1899	.12
78	Delta S., g.	Colo.	1,000,000	1,000,000	1		60,000	Jan. 1897	.01
79	Delta, l. z.	Mo.	100,000	100,000	1	3,580	7,680	April. 1900	.01
80	Dixie, g.	Utah.	125,000	125,000	1	10,000	10,000	April. 1900	.02
81	Doe Run, l.	Mo.	500,000	5,000	100	10,000	100,000	April. 1900	.50
82	Dutch, g.	Cal.	1,500,000	130,000	10		39,000	Feb. 1898	.05
83	Eldorado, g.	Cal.	1,000,000	100,000	10		10,000	July. 1899	.10
84	Elkhorn, New, s. l.	Colo.	437,500	87,500	5		1,325,000	June. 1898	.48
85	Elkton Con., g.	Colo.	1,250,000	1,125,000	1	33,750	754,461	Mar. 1900	.03
86	El Paso, g. s.	Colo.	900,000	900,000	1		12,393	Jan. 1898	.01
87	Empire State-Idaho	Idaho	1,000,000	98,514	10	118 217	436,255	April. 1900	.30
88	Enterprise, s. l.	Colo.	500,000	500,000	1		900,000	Sept. 1898	.05
89	Fanny Rawlings, g. s.	Colo.	1,000,000	1,000,000	1		20,000	Aug. 1899	.01
90	Favorite, g.	Colo.	1,200,000	1,200,000	1	48,000	48,000	April. 1900	.04
91	Federal Steel, pf.	U. S.	100000,000	532,610	100	3,195,660	4,793,520	April. 1900	3.00
92	Federal Steel, com.	U. S.	100000,000	464,843	100	1,743,161	1,743,161	Mar. 1900	2.50
93	Fern, g.	B.Col	200,000	200,000	1		10,000	Jan. 1898	.05
94	Ferris-Haggarty, c.g.s.	Wyo.	1,000,000	1,000,000	1		5,000	Feb. 1899	.00½
95	Findley, g.	Colo.	1,250,000	1,250,000	1				
96	Florence, s.	Mont.	2,500,000	440,000	5	22,000	252,000	April. 1900	.05
97	Frisco Con., l. s.	Idaho	2,500,000	500,000	5		920,000	Nov. 1899	.25
98	Galena, s. l. g.	Utah.	1,000,000	100,000	10		71,000	Sept. 1897	.05
99	Garfield Con., g.	Colo.	1,200,000	1,200,000	1		34,000	May. 1899	.01
100	Geyser-Marion, g.	Utah.	1,500,000	300,000	5		96,000	Sept. 1898	.02
101	Gold Coin of Victor, g.	Colo.	1,000,000	1,000,000	1	80,000	440,000	April. 1900	.02
102	Gold Deposit, g.	Colo.	500,000	500,000	1	10,000	10,000	Mar. 1900	.02
103	Gold & Globe, g.	Colo.	750,000	750,000	1		51,625	July. 1898	.00½
104	Gold King, g.	Colo.	1,000,000	1,000,000	1	30,000	120,000	Jan. 1900	.03
105	Gold Sovereign, g.	Colo.	3,000,000	3,000,000	1				
106	Golden Cycle, g.	Colo.	1,000,000	200,000	5	40,000	298,500	April. 1900	.05
107	Golden Eagle, g.	Colo.	500,000	500,000	1		20,000	Nov. 1899	.01
108	Golden Fleece, g. s.	Colo.	600,000	600,000	1		569,480	Feb. 1897	.01
109	Golden Reward, g.	S. D.	1,000,000	100,000	10		155,000	Feb. 1898	.15
110	Golden Star, g.	Ont.	1,200,000	1,200,000	1		45,500	July. 1899	.00½
111	Gould, g.	Colo.	1,000,000	1,000,000	1				
112	Grafton, g.	Colo.	1,000,000	1,000,000	1		10,000	Oct. 1899	.01
113	Grand Central, g.	Utah.	250,000	250,000	1		666,250	Sept. 1899	.24
114	Grand Gulch	Ariz.	250,000	240,000	1	9,600	9,600	April. 1900	.01
115	Grass Valley Expl	Cal.	100,000	30,000	2	30,000	60,000	April. 1900	.25
116	Gwin, g.	Cal.	1,000,000	100,000	10		86,500	Sept. 1899	.25
117	Hall Mines, Ltd.	B.Col	1,500,000	250,000	5		120,000	May. 1899	.24
118	Hecla Con.	Mont	1,500,000	30,000	50		2,190,000	Dec. 1898	.50
119	Hidden Treasure, g.	Cal.	500,000	360,000	1		3,600	July. 1899	.01
120	Holy Terror, g.	S. D.	500,000	500,000	1	15,000	187,000	April. 1900	.01
121	Home, g.	Colo.	50,000	50,000	1	50,000	50,000	May. 1900	1.00
122	Homestake, g.	S. D.	21,000,000	210,000	$100	$420,000	$8,563,750	April. 1900	.50
123	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25		5,250,000	Mar. 1899	.05
124	Ida May, g.	Colo.	500,000	500,000	1				
125	Idaho	Idaho	1,000,000	1,000,000	1	8,188	8,188	April. 1900	.01
126	Idaho, s. l.	B.Col	500,000	500,000	1		292,000	Jan. 1899	.05
127	Independence Town & M	Colo.	1,250,000	1,250,000	1	37,500	50,000	May. 1900	.01
128	International, z.	Mo.	1,000,000	1,000,000	1	21,000	21,000	May. 1900	.01
129	Iowa, g. s. l.	Colo.	1,666,667	1,666,667	1	7,500	97,500	Jan. 1900	.00¾
130	Iron Mountain, g. s. l. i.	Mont.	5,000,000	500,000	10		507,500	April. 1898	.02
131	Iron Silver, s l.	Colo.	10,000,000	500,000	20		2,500,000	April. 1889	.20
132	Isabella, g.	Colo.	2,250,000	2,250,000	1	67,500	607,500	Mar. 1900	.03
133	Jack Pot, g.	Colo.	1,250,000	1,250,000	1		75,000	Dec. 1899	.06
134	Jamison	Cal.	3,900,000	390,000	10		50,700	April. 1899	.10
135	Keystone, g.	Colo.	1,500,000	1,500,000	1		35,000	Mar. 1894	.01½
136	Klondike Bonanza, Ltd.	Klond	750,000	52,750	5		12,000	Aug. 1899	.24
137	Lake Superior Iron	Mich.	2,100,000	84,000	25		2,132,000	Feb. 1899	1.00
138	Last Chance, s. l.	B.Col	500,000	500,000	1		45,000	Apr. 1899	.05
139	Last Dollar, g.	Colo.	1,500,000	1,500,000	1	30.000	60,000	Feb. 1900	.02
140	Le Roi, g.	B.Col	5,000,000	200,000	5		1,305,000	Nov. 1899	1.20
141	Lexington, g.	Colo.	1,500,000	1,500,000	1				
142	Lillie, g.	Colo.	1,250,000	250,000	5	45,117	349,300	April. 1900	.05
143	Little Tiger, g.	Cal.	500,000	500,000	1	15,000	47,500	Feb. 1900	.01½
144	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	80,000	1,690,000	April. 1900	.10
145	Marion Con.	Colo.	5,000,000	500,000	10		300,000	May. 1899	.01
146	Mary McKinney, g.	Colo.	1,000,000	1,000,000	1	90,000	120,000	April. 1900	.06
147	Maryland Coal, pf.	Md.	1,885,015	18,850	100		546,619	Dec. 1899	3.00
148	Matoa, g.	Colo.	1,000,000	1,000,000	1		25,000	Dec. 1898	.02½
149	Mercur, g.	Utah.	5,000,000	200,000	25	75,000	1,441,000	April. 1900	.12½
150	Missouri Zinc Fields, pf.	Mo.	400,000	16,000	25	16,573	31,885	April. 1900	.16
151	Modoc, g. s.	Colo.	500,000	500,000	1	20,000	165,000	April. 1900	.01
152	Mollie Gibson, s. l.	Colo.	5,000,000	1,000,000	5		4,080,000	Jan. 1895	.05
153	Monarch, g.	Colo.	1,000,000	1,000,000	1	120,000	120,000	April. 1900	.12
154	Montana Coal & Coke.	Mont.	5,000,000	200 000	25	60,000	60,000	April. 1900	.30
155	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5		453,700	April. 1899	.12
156	Montana Ore Purchas'g.	Mont.	2,500,000	80.000	25	80,000	1,440,000	Feb. 1900	1.00
157	Montreal, g.	Colo.	1,000,000	1,000,000	1				
158	Monument, g.	Colo.	300.000	300,000	1		18,124	Nov. 1899	.01
159	Moon-Anchor Con., g.	Colo.	1,750,000	600,000	1		216,000	Nov. 1898	.07½
160	Moose, g.	Colo.	600,000	600,000	1		186,000	Feb. 1896	.01
161	Morning Star Drift, g.	Cal.	240,000	2,400	100		847,200	Nov. 1899	10.00
162	Morse, g.	Colo.	1,250,000	1,250,000	1		215,650	May. 1899	.12
163	Mountain Beauty, g.	Colo.	2,000,000	2,000,000	1				
164	Mountain Copper.	Cal.	6,250,000	250,000	25	660,000	1,833,750	April. 1900	2.64
165	Mt. Rosa, g.	Colo.	1,000,000	1,000,000	1		75,000	Dec. 1899	.04
166	Mt. Shasta	Cal.	100,000	20,000	5		6,000	May. 1899	.30
167	Moulton	Mont.	2,000,000	400,000	5		500,000	Oct. 1899	.05
168	Napa Con., q.	Cal.	700,000	100,000	7	40,000	1,080,000	April. 1900	.20
169	National Lead, com.	U. S.	15,060,000	149,054	100	149,054	1,341,486	Mar. 1900	1.00
170	National Lead, pf.	U. S	15,000,000	149,040	100	260,820	9,796,820	Mar. 1900	1.75
171	New Central Coal.	Md.	1,000,000	50,000	20	20.000	490,000	April. 1900	.40
172	New Idria, q.	Cal.	500,000	100,000	5	40,000	210,000	April. 1900	.20
173	N. J. & Mo. Zinc.	Mo.	500,000	30,000	10	5,000	5,000	April. 1900	.10
174	New York Zinc.	Mo.	700,000	28,000	25	28,000	49,000	April. 1900	.25
175	N. Y. & Hon Rosario, s. g.	C. A.	1,500,000	150,000	10	60,000	1,222,000	April. 1900	.10
176	North Star Mines of N.J.	Cal.	5,000,000	250,000	10		50,000	Nov. 1899	.20
177	Nugget.	Colo.	1,000,000	1,000,000	1		35,000	Aug. 1898	.00½
178	Okanogan, g.	Wash	62,500	1,250,000	05		3,125	Oct. 1899	.00¼
179	Ontario, s. l.	Utah.	15,000,000	150,000	100	90,000	13,602,500	April. 1900	.30
180	Ophir, g.	Colo.	700,000	700,000	1				
181	Orphan Belle, g.	Colo.	1,000,000	1,000,000	1		197,999	Dec. 1899	.09
182	Original Empire, g.	Cal.	5,000,000	50,000	100		500,000	May. 1899	1.00
183	Osceola, c.	Mich.	2,500,000	93,000	25		3,080,500	Dec. 1899	3.00
184	Pacific Coast Borax.	Cal.	2,000,000	20,000	100	100,000	522,500	Dec. 1900	5.00
185	Parrot, c.	Mont.	2,300,000	230,000	10	345,000	3,380,898	Jan. 1900	1.50
186	Pennsylvania Coal.	Pa.	5,000,000	190,000	50		4,050,000	May. 1899	8.00
187	Pennsylvania Con.	Cal.	5,150,000	51,500	100	20,600	156,175	April. 1900	.10
188	Pennsylvania Steel, pf.	Pa.	1,500,000	15,000	100	26,250	52,500	Jan. 1900	1.75
189	Petro, g.	Utah.	1,000,000	200,000	5		32,000	Oct. 1899	.02½
190	Pharmacist Con., g.	Colo.	1,500,000	1,500,000	1		84,000	Jan. 1898	.01
191	Pinnacle, g.	Colo.	2,000,000	2,000,000	1				
192	Pioneer, g.	Cal.	1,000,000	100,000	10		62,500	Mar. 1899	.12½
193	Pittsburg Coal, pf.	Pa.	32,000,000	308,000	100	539,000	539,000	Jan. 1900	1.75
194	Plumas Eureka, g.	Cal.	1,406,250	140,625	10		2,713,169	Oct. 1896	.12
195	Portland, g.	Colo.	3,000,000	3,000,000	1	270,000	2,827,080	April. 1900	.02
196	Princess, g.	Colo.	1,000,000	1,000,000	1		45,000	May. 1896	.01
197	Prince Albert, g.	Colo.	3,000,000	3,000,000	1				
198	Queen Bess Propr., s. l.	B.Col	500,000	100,000	5		25,000	July. 1899	.12½
199	Quicksilver, pref.	Cal.	4,300,000	43,000	100		1,845,411	May. 1899	.50
200	Quincy, c.	Mich.	2,500,000	100,000	25	500,000	11,570,000	Feb. 1900	5.00
201	Rambler—Cariboo, s. l.	B.Col	1,000,000	1,000,000	1		60.000	Dec. 1899	.01
202	Raven, g.	Colo.	1,500,000	1,000,000	1	30,000	99,500	Mar. 1900	.01
203	Reco, s. l.	B.Col	1,000,000	1,000,000	1		297,500	Jan. 1898	.10
204	Republic Con., g.	Wash	3,500,000	3,500,000	1	105,000	382,500	Mar. 1900	.01
205	Republic Iron & Steel, pf	U. S.	25,000,000	212,570	100	371,997	1,215,992	April. 1900	1.75
206	Reward, g.	Cal.	1,000,000	100,000	10		20,000	Aug. 1899	.20
207	Russell-Irwin, z.	Mo.	250,000	25,000	10		15,000	Oct. 1899	.10
208	Sacramento, g.	Utah.	5,000,000	1,000,000	5		138,000	Oct. 1899	.00½
209	St. Joseph, l.	Mo.	3,000,000	300,000	10	37,500	2,934,500	Mar. 1900	.50
210	Seventy-Six, g. s.	Colo.	1,000,000	200,000	5		2,950	Mar. 1898	.01
211	Santa Rosalia, g.s.	Cal.	100,000	100,000	1		130,000	Oct. 1899	.05
212	Silver King, g. s. l.	Utah.	300,000	150,000	20	300,000	2,750,000	April. 1900	.50
213	Small Hopes, s.	Colo.	5,000 000	250,000	20		3,325,000	Feb. 1899	.10
214	Smuggler, s. l. z.	Colo.	1,000,000	1,000,000	1	270,000	1,455,000	April. 1900	.03
215	South Eureka, g.	Cal.	1,500,000	300,000	5		12,000	May. 1898	.04
216	South Swansea, s. l.	Utah.	150,000	150,000	1		165,000	Oct. 1899	.05
217	Specimen, g.	Colo.	1,200,000	1,200,000	1				
218	Squaw Mountain, g.	Colo.	2,000,000	2,000,000	1		10,000	Nov. 1899	.00½
219	Standard Con., g. s.	Cal.	2,000,000	200,000	10	20,000	3,919,226	Feb. 1900	.10
220	Standard	Idaho	500,000	500,000	1		1,745,000	April. 1899	.06
221	Stratton's Independ'ce.	Colo.	5,500,000	1,000,000	5	480,000	1,440,000	Feb. 1900	.48
222	Strong, g.	Colo.	2,500,000	2,500,000	1	100,000	950,000	April. 1900	.01
223	Swansea, s. l.	Utah.	500,000	100,000	5	25,000	226,500	April. 1900	.05
224	Tamarack, c.	Mich.	1,500,000	60,000	25		6,270,000	Dec. 1899	6.00
225	Temonj, g.	Colo.	1,000,000	1,000,000	1				
226	Tomboy, g.	Colo.	1,500,000	300,000	5		812,000	Dec. 1899	.24
227	Tornado, g.	Colo.	1,000,000	1,000,000	1				
228	Touraine, g.	Colo.	1,250,000	1,250,000	1	87,500	87,500	April. 1900	.07
229	Union, g.	Colo.	1,250,000	1,250,000	1		82,744	June. 1896	.01
230	Union Leasing	Colo.	1,000,000	1,000,000	1		336,000	July. 1895	.04
231	United, z. l., pref.	Mo.	1,000,000	40,000	25	40,000	80,000	April. 1900	.50
232	United Verde, c.	Ariz.	3,000,000	300,000	10	600,000	1,462,500	April. 1900	.50
233	Utah.	Utah.	1,000,000	100,000	10		179,000	Jan. 1899	.02
234	Victor, g.	Colo.	1,000,000	200,000	5		1,155,000	Dec. 1898	.50
235	Vindicator, Con., g.	Colo.	1,500,000	1,065,000	1	106,500	411,000	April. 1900	.05
236	War Eagle Con.	B.C.	2,000,000	1,750,000	1	52,500	545,250	Feb. 1900	.01½
237	What Cheer, z.	Mo.	225,000	22,500	10	4,500	9,000	Feb. 1900	.20
238	Wolverine, c.	Mich.	1,500,000	60,000	25	120,000	390,000	April. 1900	2.00
239	Work, g.	Colo.	1,500,000	1,500,000	1				
240	Yellow Aster, g.	Cal.	1,000,000	100,000	10	80,000	463,789	April. 1900	.20
241	Ymir, g.	B.Col	1,000,000	125,000	5		30,000	Nov. 1899	.24
242	Zenobia, g.	Colo.	1,000,000	1,000,000	1		10,000	Feb. 1898	.01

G., Gold. S., Silver. L., Lead. C., Copper. Z., Zinc. This table is corrected up to April 26th. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.	$0.10
Minute No. 1	"	.15
No. 15	"	1.00
Corundum, N. C.	"	.07@.10
Chester, Mass.	"	.04½@.05
Emery, Turkish flour	"	.03
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.03¼
Grains	"	.03½
Crude, Kuluk, best...lg. ton		18.50
Levant, "	"	22.00
Naxos (Greek) best	"	26.00
Pumice Stone, Am. powd.	lb.	.01@.02
Italian, powdered	"	.01¼
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02½@.03
Lump, per quality	"	.05@.14
Rouge, per quality	"	.12@.30
Acids—Acetic, 30% pure..100 lbs.		3.50
30% ch. pure	"	6.00
80% pure	"	7.50
Benzoic, English	oz.	.12½
German	lb.	.46
Boracic, crvst.	"	.10
Powdered	"	.10½
Carbolic, crude, 60%	gal.	.28
Cryst. 37%	lb.	.36
Liquid, 95%	gal.	.40
Carbonic, liquid	lb.	.12½
Chromic, crude	"	.20
Chem. pure	"	.50
Absol. ch. pure	"	1.75
Hydrochloric, ch. pure.	"	.07
Hydrofluoric, 36%	"	.03
48%	"	.05
Best	"	.25
Nitric, chem. pure	"	.09
Sulphuric, 98%	"	.01½
Chem. pure	"	.07
Tartaric, cryst.	"	.32
Powder	"	.32½
Alcohol—Grain	gal.	2.40
Refined wood, 95@97%	"	.90@.95
Purified	"	1.20
Alum—Lump	100 lbs.	1.75
Ground	"	1.85
Chrome, com'l	"	2.75@3.00
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	"	.05
Sulphate, pure	"	1.50
Com'l	"	.01¼
Ammonia—Aqua, 16°	"	.03¼
18°	"	.03½
20°	"	.04
26°	"	.05¾
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate lump	"	.08¼@.08¾
Powdered	"	.09¼@.09¾
Muriate, gran.	"	.06½
Lump	"	09¼
Nitrate, white, pure (99%)	"	.10½
Phosphate, com'l	"	.12
Chem. pure	"	60
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08½
Oxide, com'l white, 95%	"	.09½
Com'l white, 99%	"	.12
Com'l gray	"	.07
Sulphuret, com'l	"	.16
Arsenic—White	"	4.70@4.75
Red	"	.07¾@.08
Asphaltum—		
Ventura, Cal.	sh ton	32.00
Cuban	lb.	.01½@.03¼
Egyptian, crude	"	.05½@.06
Trinidad, refined	lg. ton	30.00@35.00
San Valentino	lg. ton	15.00
Seyssel (French) mastic.	sh.ton	21.00
Gilsonite, Utah, ordinary	lb.	.03
Select	"	.03¾
Barrum—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@.02
Chloride, com'l	"	.02@.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.06
Oxide, com'l, hyd. cryst	"	.18
Hydrated, pure cryst.	"	.35
Pure, powd.	"	.27
Sulphate	"	.01
Barytes—Am. Cr., No. 1.	sh.ton	9.00
Crude, No. 2	"	8.00
Crude, No. 3	"	7.75
Am. Floated	"	14.50@17.50
German, gray	"	14.50
Snow white	"	17.50
Bauxite—Ga. mines: 1st grade	lg. ton.	5.00@5.10
Second grade	"	4.00@4.50
Ala., f.o.b., 1st grade	"	5.00
Second grade	"	3.85
Bismuth—Oxide, hydr.	lb	2.25@2.30
Subnitrate	"	1.30@1.35
Bitumen, "B"	"	.03½
"A"	"	.05
"A" and "B"	"	.04½
Bone Ash	"	02¾@.03½
Borax—Cryst. and pow'd	"	.07¼@.07½
Bromine—Bulk	"	.45
Cadmium—Metallic	"	1.40
Acetate, pure white	100 lbs.	1.00
Sulphate	"	2.00@2.50

	Cust. Meas.	Price.
Calcium—		
Acetate, gray	100 lbs.	$1.55
" brown	"	1.10
Carbide, ton lots, f. o. b. Niagara Falls, N.Y.	sh. ton	75.00
Carbonate, ppt.	lb.	.05
Chloride, com'l	100 lbs.	.95
Best	"	1.90
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Belgium	"	1.95@2.20
English	"	2.45@2.55
German	"	2.30@2.70
"Rosendale," 300 lbs.	"	1.10
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported.	"	1.65
Ceresine—		
Orange and Yellow	lb.	.12
White	"	.14
Chalk—Lump, bulk	sh. ton	2.15
Precipitated	lb.	.05
French	"	.03
Chlorine—Liquid	"	.28
Water	"	.15
Chrome Ore—		
(50% chrome) ex-ship	lg. ton	20.00@20.50
Sand	"	35.00
Bricks, f.o.b., Pittsburg. M		175.00
Clay, China—Am. com., ex-dock, N. Y.	lg ton	8.00
Am. best, ex-dock, N. Y.	"	9.00
English, common	"	12 00
Best grade	"	17 00
Slip Clay	sh. ton.	5.00
Coal Tar Pitch	gal.	.08
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide—Black	"	2.00
Gray	"	2.50
Smalt, blue ordinary	"	.20
Best	"	.30
Chem. pure	"	5.00
Copperas	100 lbs.	.72½
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, com'l	"	.19
Cream of Tartar—Crys.	"	.22½
Granulated	"	.22½
Powdered	"	.23½
Cryolite	"	.06½
Explosives—		
Blasting powder, A. 25 lb.	keg	2.50
Blasting powder, B	"	1.25
"Rackarock," A	lb.	.25
"Rackarock," B	"	.18
Judson R.R. powder	"	.10
Dynamite (20% nitro-glycerine)	"	.13
(30% nitro-glycerine)	"	.14
(40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.22
Glycerine for nitro (32 2-10° Be.)	"	.13¼@.13½
Feldspar—Ground	sh. ton	8.00@9.00
Flint—(See Silica).		
Fluorspar—		
Am. lump, 1st grade	"	12.90
2d grade	"	12.40
Gravel & crushed, 1st g	"	11.90
2d grade	"	11.00
Ground, 1st grade	"	16.45
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump.	100 lbs.	.75
Powdered	"	.85
Refined lump	"	1.25
Ganister Rock	lg. ton.	6.50
Gypsum—Ground	sh. ton	8.00@8.50
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground.		
American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—		
Crude	100 lbs.	2.45
Resublimed	"	2.85
Iron—		
Muriate	lb.	.05
Nitrate, com'l	"	.01
True	"	.03¾
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	.01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—		
Acetate, white	lb.	.07
Com'l, broken	"	.06¼
Brown	"	.05½
Nitrate, com'l	"	.06½
" gran	"	.8¼
Lime—Bldg., ab. 250 lbs	bbl.	.90
Finishing	"	1.00
Magnesite—		
Crude, lump (95%) Greece	lg. ton	7.00@7.50
Calcined (Greece)	sh. ton	16.50
Bricks (Greece)	M.	170.00
Bricks, Am., f.o.b. Pittsburg	M.	175.00
Magnesium—		
Carbonate, light, fine pd	lb.	.03¾
Blocks	"	.06@.09
Chloride, com'l	"	.01¾
Fused	"	.20
Nitrate	"	.60
Manganese—Crude, pow'd 70@75% binoxide	"	.01¼@.01½
Crude, pow'd 75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼

	Cust. Meas.	Price.
Manganese—		
Crude-pow'd 90@95% binoxide	lb.	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50% Foreign	unit	.24@.24½
Domestic	"	.30
Marble—Flour	sh. ton	5.50@6.00
Mercury—		
Bichloride	lb.	.74
Mica—N. Y. gr'nd, coarse	"	.04@.05
Fine	"	.06@.06½
Sheets, 1½x3 in	"	.60
8x10 in	"	13.00
Mineral Wool—		
Slag, ordinary	100 lbs.	.90
Selected	"	1.40
Extra	"	3.00
Rock, ordinary	sh. ton	32.00
Selected	"	40.00
Extra	"	50.00
Monazite—92%	"	140.00
Nickel—Oxide, No. 1	lb.	1.00
No. 2	"	.60
Sulphate	"	.13@.13½
Oils—Black, reduced 29 gr.		
25@30 cold test	gal.	.11@.11½
15, cold test	"	.12@.12½
Zero	"	.13@.14
Summer	"	.10½@.11
Cylinder, dark steam ref	"	.10@.15
Dark filtered	"	.13@.18
Light filtered	"	.16@.19
Extra cold test	"	.23@.28
Gasolene, 86° @90°	"	.16@.21
Naphtha, crude 68@72°	"	10.65
"Stove"	"	.13
Linseed, domestic raw	"	.62@.63
Boiled	"	.61@.65
Calcutta, raw	"	.71
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08½@.10
Wood grease	"	.05@.06
	"	.09
Ozokerite—Foreign		
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	27
Chrome green, common	"	.05
Extra	"	.10@.12
Yellow, common	"	.10
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack, com'l	lb.	.03
Refined	"	.08
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd.	"	.06½
English flake	"	.09½
Glassmakers, Foreign	"	.06½
Metallic, brown	sh. ton	16.00@19.50
Red	"	16.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾
French, washed	"	.01¼@.02½
Orange mineral, Am.	"	.08¼@.08½
Foreign, as to make	"	.09½@.11½
Paris green, pure, bulk	"	.12½@.13
Red lead, American	"	.06½
Foreign	"	.08¾
Shellac, "D. C."	"	.27
Native	"	.14½
Turpentine, spirits	gal.	.56½
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.14
Quicksilver	"	.69
Chinese	"	.85
English, imported	"	.71
White lead, Am., dry	"	.05¾
In oil	"	.06½
English	"	.06¼@.08¾
Whiting, common	100 lbs.	.40
Gilders	"	.54
Zinc white, Am., ex. dry	lb.	.04¾@.05¼
American, red seal	"	.07¼@.07¾
Green seal	"	.07¾@.08
Foreign, red seal, dry	"	.06¼@.06¾
Green seal, dry	"	.06¾@.06¾
Foreign, in oil	"	.10¼@.11¾
Plumbago—		
Am. lump, f. o. b. Providence, R. I.	sh. ton	8.00
Am. pulv., f. o. b. Providence, R. I.	"	30.00
German, lump	lb.	.01¼
Pulverized	"	.02
Ceylon, pulv. common	"	.04
Best	"	.06@.08
Italian, pulv	"	.01¼
Potash—		
Caustic, ord.	"	.06@.06¼
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst.	"	.08¼
Powdered or gran	"	.12
Bichromate	"	.09
Bromide	"	.46
Carbonate, 96@98%	"	.06¼
Com'l	"	.03¼
Chromate	"	.35
Cyanide (98@99%)	"	.28@.29
Iodide, bulk	"	2.30
Permanganate, pure cr.	"	.14
Prussiate, yellow	"	.18½@.19
Red	"	.37
Silicate	"	.06
Sulphide, com'l	"	.10
Quartz—(See Silica).		
Rosin—		
Com. strained (280 lbs.)	bbl.	1.70
Best strained	"	3.50
Medium	"	2.00
Salt—		
N.Y. com. fine	sh. ton	2.00

	Cust. Meas.	Price.
Salt—N. Y. agricultural	sh. ton	$1.50
Saltpeter—Crude	100 lbs.	3.55@3.62½
Refined	"	4.50
Samarskite	lb.	1.00
Silica—Best foreign	lg. ton	10.00@11.00
Ground quartz, ord.	sh. ton	6.00@8.00
Best	"	12.00@13.00
Lump quartz	"	2.50@4.00
Glass sand	"	2.75
Fire bricks (Blue Welch)	M.	35.00
Silver—Chloride	oz.	.65
Nitrate	"	.40
Oxide	"	.85@1.10
Slate—Ground	sh. ton	7.50@8.75
Sodium—Acetate, com'l	lb.	.04¾
Bichromate	"	.06¾@.06½
Bromide	"	.50
Chlorate, com'l	"	.10
Hyposulphite	100 lbs.	1.70@1.80
Nitrite, 96@98%	lb.	.08
Peroxide	"	.45
Phosphate	"	.02¾
Prussiate	"	.14½
Triphosphate	"	.04
Silicate, conc	"	.05½
com'l	"	.02½
Sulphate, gran., puri'd.	"	.03
Sulphide	"	.01¾
Sulphite	"	.02½
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—Nitrate	"	.08
Sulphur—Roll	100 lbs.	1.75
Flour	"	1.85
Flowers, sublimed	"	2.05
Talc—N. C., 1st grade	sh. ton	13.75
N. Y., Fibrous	"	8.00@9.00
French	lg. ton	16.00
Italian	100 lbs.	1.50@2.00
Tin—Bichloride	lb.	.09½@.10
Crystals	"	.22¾
Muriate, 36°	"	.09
Muriate, 52°	"	.15
Oxide, white, ch. pure	"	.41
Uranium—Oxide	"	1.80@3.00
Zinc—Metallic, ch. pure	"	.09
Carbonate	"	.15
Chloride	"	.05¼
Dust	"	.07¼
Sulphate	"	.02@.02⅛

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5 71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N Y.)	lb.	32.00
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Cadmium	kg.	1.90
Calcium	grm.	4.28@5.95
Cerium—Fused	grm.	1.02
Nitrate (N. Y.)	lb.	17.00
Chromium—Fused, Elect.	kg.	5.95
Pure powder 95%	"	1.79
Chem. pure cryst	grm.	.26
Cobalt—(98@99%)	kg.	6.31@7.85
Pure	"	30.94
Didymium—Nitrate (N.Y.)	lb.	60.00
Erbium	grm.	3.09
Nitrate (N. Y.)	lb.	62.00
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.50
Indium	grm.	4.05
Iridium	"	1.43
Lanthanum—Powder	"	4.28
Electrol, in globules	"	9.04
Nitrate (N. Y.)	lb.	57.00
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Magnesium—In bars	kg.	6.19
In wire	"	9.99
Powdered	"	5.71@6.90
Molybdenum—Fused	grm.	.20
Powder, 95%	kg.	2.62
Niobium	grm.	3.81
Osmium	"	.95
Palladium—Wire	"	.95
Sponge	"	.71
Potassium—In balls	kg.	17.85
Rhodium	grm.	2.62
Rubidium—Pure	"	4.76
Ruthenium—Powder	"	2.38
Rutile—Crude	kg.	.43
Selenium—Com'l powder	"	33.32
Sublimed powder	"	42.84
Sticks	"	35.70
Silicium—Com'l	"	28.56
Pure crystals	"	59.50
Sodium (N. Y.)	lb.	.75
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks.	kg.	119.00
Powder	"	95.20
Thallium	"	26.18
Thorium—Metallic	grm.	7.85
Nitrate 49@50% (N. Y.)	lb.	4.75
Titanium	kg.	47.60
Uranium	"	190.40
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.19
Wolfram—Fused, elect.	kg.	238.00
Powder, 95@98%	"	1.67
Purest, powder	"	6.43
Yttrium	grm.	3.33
Nitrate (N. Y.)	lb.	62.00
Zirconium—Com'l	kg.	119.00
Nitrate (N. Y.)	lb.	9.00

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to April 16. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.